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n°5

# The Laboratory Planet

2016 · 71TH YEAR SINCE 1945

Why are we working  
for our own Obsolescence?

XENOPOLITICS  
OF THE ANTHROPOCENE

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## OF A WORLD BECOMING :ALIEN:

Research hypotheses  
on Capitalism aims and genesis

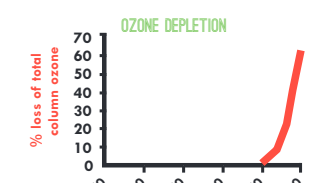
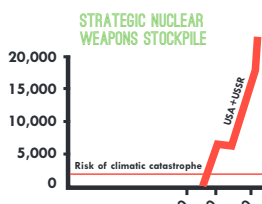
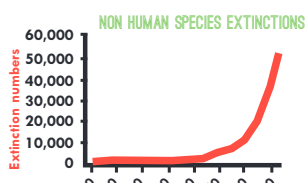
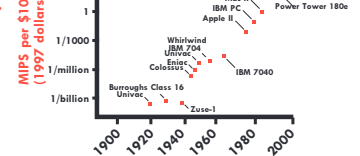
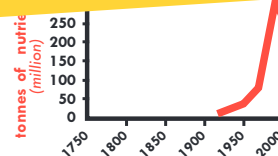
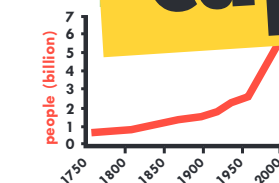
Over the past three centuries, Planet Earth first turned into a factory, and later on into a laboratory. The Laboratory Planet documents this transformation.

The Anthropocene debate aims to date the moment when human species, or part of it, started to become a significant driving force of major and irreversible terrestrial environment transformation.

Hardly able to figure out an earthly human project unity leads to extend reflexion on this transformation real agents. This investigation states the probability than this major transformation may be the fruit of a xeno power, alien



## alien capitalism



# GENERAL ALIENOLOGY

BY BUREAU D'ÉTUDES **artist group**

**F**redric Jameson (1) considers pleasure borne of catastrophe to be one of the most striking traits of postmodern capitalism. Deriving pleasure or finding relief in impending catastrophe has become a new means by which to inspire faith, a new faith that delights in disaster. This faith is the very antithesis of the struggle for salvation that brings displeasure, along with the drive to secure another possible world.

We can hence see the immense gap between the power of dystopia and the frequently false nature of utopian pretension; utopia can only maintain its practicability and integrity if it eschews being the ultimate fulfilment of the pleasure taken in catastrophe. This is why it must needs remain hidden from the powerful gaze of the automatons of alien capitalism.

However, despite utopia being the anticipated projection of light onto the world, is there not meantime a struggle to shed light on what the fate of the world is, and how it is that the roads to deliverance are so at odds with one another?

## Mineral utopia

Let us forget for a moment the standpoint that comes of being human, of being alive, of being earthbound to boot, and let us imagine, for the sake of argument, the absence of any anthropomorphic rendering of objects (Illich's *tools for conviviality*, Rodchenko's comrade objects), even the absence of any biomorphisation that has as its aim to preserve organic life. There would then be no objects in opposition to those that would be subjects, instead there would be agents, objects or subjects, humans or non-humans, biomorphic or otherwise, depending on circumstance, context, perspective, and light. We might envisage for example a method of inorganic emancipation, one we could qualify as cold - not having the safeguards of that which is animate (eukaryotes or prokaryotes) - and which would be defined by its very resistance to death.

In such an instance, the agent is acellular, inorganic. It carries the power, the range and the antiquity of chemical elements that make up the history of the cosmos, combining and recombining themselves at the whim of stellar vagaries. The creative power of these acellular agents, spiritual automatons, Grand Ancients of the lithosphere, of the heliosphere and the galaxies, is non-human, stripped of biocentrism and terracentrism. It is not concerned with the protection that the biosphere or that humans accord

themselves. It has no regard for this membrane politics, which Sloterdijk devotes himself to describing at length. This is why mineral intellectuality could well lead to radical new experiments and to the creation of new worlds, possibly post-organic ones, whether on other planets, stars or in other galaxies, or even other dimensions of reality.

Let this acellular intellectuality, subject to the laws of physics and chemistry by dint of its absence of discontinuity, be referred to as Cthulhu, the Great Old One evoked by Lovecraft. By the same token, we could call him by Egyptian names, given the extent to which the ancient Egyptians conceived of their gods as being formed of minerals (the minerals, in turn, being emanations of the divine). As far back as the 18th century, a text from the dynasty of the time refers to all minerals as "divine members" (2). The divine eye of Ra causes metals and minerals to multiply and the Pharaoh governs the production chain of mining prospection. He presides over the fecundity of the mines. Gold in particular is the principle constitutive element of the gods. It is the flesh of Ra, it is life itself. It confers immortality, incorruptibility. It brings Osiris back to life, rendering him indistinguishable from a sun god. It allows for the dead to pass from human to divine form, by way of mineralisation. Gold is the means - although both bitumen or tar can serve as substitutes (3) - by which the mummified corpse may finally depart the humid and perishable realm of organic life, to live for all eternity, young once again, young for all time.

## Cellular utopia

This mineral intellectuality, on such a grand scale, and as deep as the cosmos itself, reminds cellular beings of their origin and of their inorganic fate. Cthulhu, the original great mineral being, is disturbing to any lucidity born on the surface of organic viscous fluxes. He constitutes evidence of the secondary nature of this lucidity which, born after the fact, has its origin in an age-old rationale with no voice ... (as is channelled by Nietzsche declaring that a living being is a rare variety of dead being). The faith native to eukaryotes, their antagonistic intellectuality separating their insides from their out, may thus be radically differentiated from that of beings with no membrane. As with Prometheus, this faith is crucified in no short measure on the inanimate rock of the Great Old Ones, and is thus adored for its mortality alone.

However, the universe is itself also promised to death, if it fails to undergo a process of resurrection which, by some miracle, would inverse the inevitable decline of matter in the nuclides. Is this thus the mission of cellular beings, bestowed on them by the great acellular beings? Is the telos of membranous beings to carry the resurrection to the heart of the laws of chemistry and physics?

There are therefore two generations, of which the second - this cellular life with its pretension to universality - would succeed the first, carried off on a wave of ineluctable collapse, along with everything from hydrogen to nuclides. The New movement will be panvitalist, aimed at transforming the decadent cosmos into a cosmos swarming with enchanted sperm circulating between the stars and galaxies. Its purpose would be to awaken matter, and to awaken it by means of a loving passion reactivating the life force of chemical elements.

and cosmic reintegration. The cult would frenetically celebrate the final endgame of the cosmos, cherishing the possibility of a radical dissolution of all that is living and of the whole depleted cosmos; the end of excitability, and also, the end of its most sophisticated production, that of interiority. This is a nihilistic goal that consists of the final eradication of the convolutions of matter, and in particular such folds of cellular matter, such recesses or cavities sheltered by the fine, translucent membranes as give rise to certain ways of thinking, a mind frame borne on cavities, on a steeping of thought. That matter



finally obliterate itself. That there be nothing rather than something, that one cease to believe that there has to be something.

Utopia is hence the way to a radical otherness. Love your otherness as you do yourself. Convert to it and disappear... or fight to the death against it.

## Cut up technique

But let's forget for the moment these movements of matter, and all their convolutions and complexities. Let us put aside the livingness that, like everything transient, secretes a lie in order not to die, a lie proportionate to the threat of death. Let us forget the order of being and the power of becoming. Forget the facts and let's chant with Hegel "Too bad for the facts (um so schlimmer für die Tatsachen)" For the action has already occurred and history is finished. There is nothing left to be done. Let us even go so far as to forget Nothing and its ultimate pretension to obliterate the world's value by resigning itself to disappearing into the cosmic abattoir. Let us surrender the ancient mineral gods and the young organic gods and turn our attention instead to the means of production behind all that is real, this intoxication mechanic that is not anthropomorphic, no more biomorphic than it is lithomorphic. This machine, this system of control, that Burroughs called the *Reality Studio*, and that Nick Bostrom sees as a simulation that generates all relations, feelings, memories.

Utopia consists here in piercing the screen. The red pill taken by Neo in the film *'The Matrix'*, which nods to the Cut Up technique, rips at the very fabric of the world and reveals the matrix, namely the structure of the Reality Studio. This tearing, by producing the sudden arrival of an exteriority, provokes in turn the eruption of an upheaval, of a renaissance in a dead world, coiled in on itself. This leads once again to the emergence of a great Other.

By the same token, if the mineral god is the Great Older One of organic fugacity, nothing is the otherness of being, the exhaust pipe of existence itself. In the same way as an extraterrestrial, a being from another planet is the otherness of the earth dweller, language (the matrix) is the otherness of awareness of self. This otherness is always antecedent to narratives that speak of it : it does not belong to facts, nor to the vagaries of matter. It does not even belong to the vagaries of being. It produces effects which do not adhere to any ontological cognitive frameworks or any framework of cognisant materiality (biological/non-biological) : it has unexpected ways of operating, unpredictable ways that pierce the screen of capitalism. The rip in the screen operated by Neo's red pill, or by the Cut Up technique



# 03 PROJECTING IMPERIALISM INTO SPACE

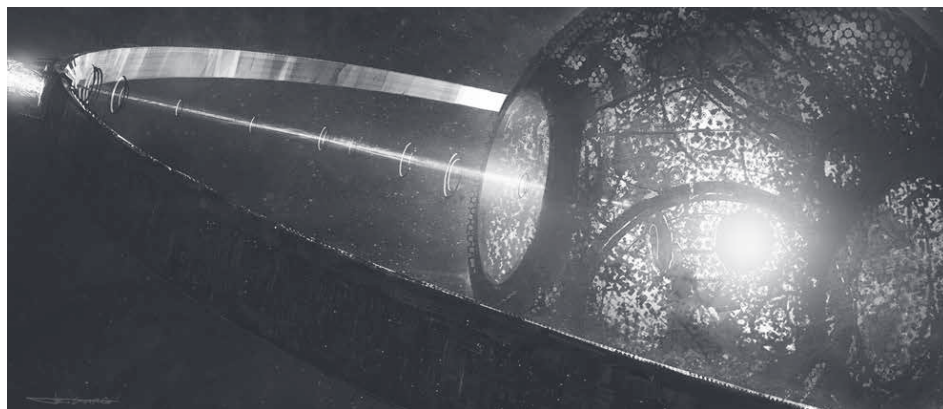
BY KEITH A. SPENCER **author**

If you had to guess, what do you think aliens would be like? Sci-fi novels and films have given us plenty of recurrent themes about alien civilizations, many of which have become ingrained: for instance, that aliens would have armed spaceships, that some would be aggressive and warlike, that they would be ever-hungry for resources—generally, that they would reflect 20th-century anxieties about the Cold War and imperialism. But these are mere fictional images, and—given that there’s never been any hint of extraterrestrial intelligence—have no basis in reality. So it would be absurd for the search for extraterrestrials to be informed by these themes, right?

Unfortunately, no. An increasing number of scientists seem convinced of a set of ideas about what supposed aliens could—even would—be like. These deterministic projections have slipped into the realm of politics and public policy.

One recent egregious example arose in early 2015, when a group of prominent scientists and technologists, including physicist Stephen Hawking and Tesla CEO Elon Musk, signed a declaration warning against “Active SETI”—that is, the act of sending out radio signals towards other stars in hopes of contacting intelligent life. (SETI is a general acronym for “Search for Extraterrestrial Intelligence.”) Co-signer David Brin, a scientist and (tellingly) science fiction author, analogizes the dangers of Active SETI with colonialism: “We have many examples where a technologically advanced civilization contacted a technologically less advanced civilization,” he says. “And in every one of those cases, there was pain. Even when both sides had the best of intentions.” (1) Whether you believe this might depend on whether you believe there is anything universal (pun intended) about the word “technology,” Brin uses it twice in that short passage. But would an alien civilization necessarily conceive of an abstract concept like “technology” in the same way that our capitalist civilization does? Even in its dictionary (Merriam-Webster) definition—“the application of scientific knowledge for practical purposes, especially in industry”—the word, like its use in Brin’s arguments, is hopelessly Eurocentric. A society that wields and defines “technology” as we do is in no way a given; “technology” in this instance is a construct, an idea inherent to Western civilization, which was itself born out of a very particular set of historical accidents that were in no way inevitable, not on Earth and not on any other planet.

Both Edward Said and Robert Marks have noted the ethnocentrism inherent to positioning Western culture as the pinnacle of human civilization. “The rise of the West is a story—to be sure, a story at the core of Eurocentrism,” writes Marks, “[and] the political, economic and military dominance of Europe and its offshoots [was] ... not inevitable.” Marks adds, “the classical British political economists—Adam Smith, Thomas Malthus, and David Ricardo—developed another strand to be woven into the story of the rise of the West: the ideas of capitalist development as “progress,” the West as “progressive,” and Asia (and by implication, Africa and Latin America, too) as “backward” and “despotic.” (2)



*Dyson sphere*

no-capitalist hegemony and the tendency for us to impose its cultural tendencies on supposed aliens—as if capitalism and Western values were universal in the literal sense (that is, extending across the universe).

This tendency to project Western capitalism into the stars is epitomized by the recent surge of excitement over a very peculiar, distant star with the turgid name “KIC 8462852.” At least one journalist hailed it as “the most mysterious star in our galaxy” over speculation as to whether its peculiar flux hinted that it could house what the media called an “alien megastructure.” (3)

Some background is required in order to understand how KIC 8462852 was popularly reported as a potential candidate solar system for alien life. The most common observational means of finding extrasolar planets is to observe the light emitting from a star and observe if the light dips at regular intervals, which is often indication that the star is partially eclipsed, from our perspective, by one of its orbiting planets. Hundreds of planets have been observed via this method. When the Kepler satellite, the most prolific planet-finding space observatory (4), observed a star with an unusual light dip pattern—one which fit no known scientific models, and was too irregular to constitute a planet—some commentators and scientists began asking whether the dip in the star’s flux could have been caused by an orbiting alien-made object. This theorized object was soon termed the “alien megastructure” by sensationalistic journalists and bloggers.

The speculative idea that a “megastructure” might be orbiting KIC 8462852 emerged only from the evidence of an irregular flux change in KIC 8462852’s light curve, which obeyed no known scientific model. And yet, a fantastic leap in logic was made here, reified in the public eye through articles and buzz online, fixated on the idea that there may be a massive solar collector array, also known as a Dyson Sphere, orbiting the star.(5)

The idea of the Dyson Sphere originated in a 1960 paper (6) by physicist Freeman Dyson speculating whether an “advanced civilization” might build millions of orbiting solar panels, enough to eclipse the light from their entire star, so that 100% of its solar energy might be harnessed for the sake of the civilization. Hence, the idea that the periodic dip in this star’s light curve could have been caused by an orbiting solar panel “megastructure,” akin to a Dyson sphere, was based on Dyson’s ideas.

ronment or conservation; and finally, a civilization willing to strip-mine and destroy entire planets in its quest for energy.

Indeed, Stuart Armstrong, a physicist at Oxford University, proposed that the latter scenario might be a “simple” way for humanity to build a Dyson Sphere—that is, to wrap our sun with orbital solar panels to collect massive amounts of energy. In a recorded lecture (7), Armstrong explained that creating a Dyson Sphere around the Sun would be relatively “easy,” though would require the complete destruction and dismantling of the planet Mercury. Armstrong structures his lecture as a series of seemingly logical assumptions that flow from each other: one, that humans would want to “colonize the galaxy,” two, there would be political will to destroy the planet of Mercury in order to build solar collectors to harness energy, and three, that we would have the robotics technology to automate much of the process. Armstrong emphasizes the simplicity of it in his lecture: “We could do it now, we could get to Mercury, put some solar panels, get some mining stuff, and get the whole procedure done. The question is, if we could automate it and have the factories built.”

The notion that energy-harnessing of this magnitude would be commonplace among alien civilizations has become a hegemonic tenet of many scientists and SETI thinkers, so much so that there is a “classification system to describe hypothetical aliens” based on measuring their ability to harness energy, a system known as the Kardashev scale. In an article about the Kardashev scale, journalist Georgy Dvorsky writes: “Kardashev’s scale has been expanded and re-interpreted to include more than just the capacity for communications technology. Astrobiologists and cosmologists now use the scale to simply describe the amount of energy available to an ETI [Extra Terrestrial Intelligence] for any kind of purpose. As a result, the scale is often used to speculate about the kinds of technologies and existential modalities that characterize advanced civilizations.” The Kardashev scale divides planetary civilizations into three types, I, II, and III. Type I civilizations are at a “technological level close to the level presently attained on the Earth, with energy consumption  $\sim 4 \times 10^{19}$  erg/sec,”(8) in Dvorsky’s words,

A Type I is typically associated with a hypothetical civilization that has harnessed all the power available to it on its home planet. As



be achieved once the entire planet is physically reconfigured to maximize its energy producing potential. For example, the entire mass of a planet could be reconstituted to take the form of a massive solar array to energize a civilization's power-hungry machinery.(9)

Correspondingly, a Type II civilization has harnessed all the energy from its local star—using Dyson Spheres, of course—whereas a Type III civilization has harnessed all the energy from its local galaxy.

The use of the term “advanced civilizations” here is highly subjective and biased. It assumes that civilizations would, in the future, follow the same energy-hungry model that our own has for a very brief time period. And yet, the deterministic path that led scientists and futurists to conclude that the Kardashev scale is a good way to typify alien civilizations, or that a Dyson sphere is a likely, logical policy and industrial outcome of an “intelligent civilization” is so accepted that it drives policy. In a phone conver-

sation with Dr. Anthony Aguirre, a University of California, Santa Cruz cosmologist and director of the Foundational Questions Institute, Aguirre said that his foundation funds research into “seeing if there are distant stars that have been manipulated by an alien intelligence.” Aguirre, too, was convinced that aliens could have imperialist aims. “If we tapped into some kind of interstellar communication stream between aliens, I would suggest that we don't interfere or make ourselves known,” he said.

It's hard to imagine a democratic, pluralistic society, lacking a rigid authoritarian command structure, would undertake such industrially and ecologically intensive projects as mining the entire energy resources of the planet, or destroying Mercury to build solar collectors around the sun. However, these might seem like logical scenarios if one were to project our capitalist imperialist civilization far into the future, assuming our civilization's industrial and cultural practices as something “innate” and “natural” to all intelligent life—rather than a specific, short-lived historical moment.

#### NOTES

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## LIFE IN THE TERATOPE

BY ŠPELA PETRIČ **biologist and artist**

*Xeno- presumes I know what homo- is. If I am unsure, I can only ever encounter tera-.*

(prefixes from Greek *homós*: one and the same; *xénos*: stranger, guest (noun); alien, foreign, strange (adj.); *téras*: monster)

### The Lost Simplicity of Zoë and Bios

Aristotle interpreted human life as an actualization of a person in society, acting as a political body (bios, the good life), along with being in possession of the primordial essence of being alive (zoë), a trait shared by all living creatures. The assumption of classical political theory was that zoë, or ‘bare life’, did not belong in the public realm, but remained within the private sphere of the household (Agamben, 1998). Later, the classical distinction between bios and zoë became increasingly disjointed under the impact of modern capitalist politics, which, according to Foucault, intimately invested the natural life of the human species in the discursive mechanisms of state power (Foucault, 1976). Life as such became a principal object of power and zoë and bios finally coincided, a phenomenon referred to as biopolitics.

Developments in the life sciences have required us to further rethink the boundaries between different forms of life, for example through cross-species DNA manipulations or the acknowledgement that the human body itself is largely inhabited by non-human genomes. As bioscience and philosophy had opened up the nonhuman dimension of life itself at a cellular, genetic, molecular, and autopoietic level, is had unhinged the categorical divide between the individual life of human beings and the collective vitality of all living matter, between the discursive politics of bios and the vital politics of zoë (van den Hengel, 2012). The zoë had returned as a vital force of material generation, as Braidotti states: “Contemporary scientific practices have forced us to touch the bottom of some inhumanity that connects to the human precisely in the immanence of its bodily materialism. With the genetic revolution we can speak of a generalized ‘becoming infra human’ of bios. The category of ‘life’ has accordingly cracked under the strain.” (Braidotti, 2006) Thus zoë, the indiscernible and unalienable component of all living beings, became increasingly relevant in our understanding of the mechanisms of society and our relationship to nature and to ourselves.

But zoë is messy, illogical, complex, serendipitous and vile. Zoë is xeno.

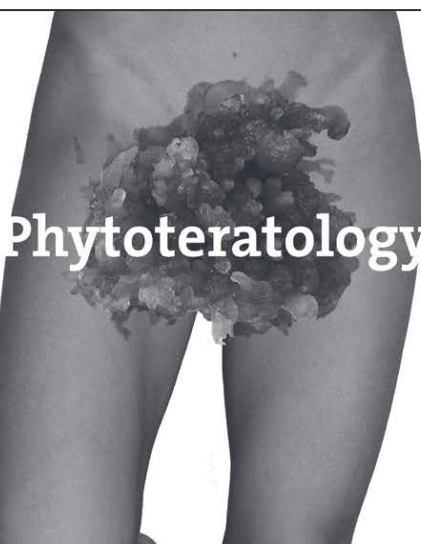
### Ecoterror Niche Construction

According to Žižek (2007), the dominant version of current ecology is the ecology of fear, fear of a catastrophe - man-made or natural - that may deeply perturb or destroy the human civilization. Fear

pushes humans to plan for measures that would protect their safety. He sees the ecology of fear developing into the predominant form of ideology of global capitalism, new opium for the masses replacing the declining religion. The underlying message of this new ecology is a deeply conservative one - any change can only be the change for the worse.

“While we cannot gain full mastery over our biosphere, it is unfortunately in our power to derail it, to disturb its balance so that it will run amok, swiping us away in the process. This is why, although ecologists are all the time demanding that we change radically our way of life, underlying this demand is its opposite, a deep distrust of change, of development, of progress: every radical change can have the unintended consequence of triggering a catastrophe.” (Žižek, 2007).

The conclusion of this reasoning is that since nature is changing constantly and the conditions on Earth will make the survival of humanity impossible in a couple of centuries, the collective goal of humanity should be not to adapt itself to nature, but to intervene into the Earth ecology even more forcefully with the aim to freeze the Earth's change. This way Earth's ecology will remain unchanged, thus enabling humanity's survival. The anthropocentric proposal points to a technological bias involved in the contemporary assessment of climate change and reveals a strong belief in human knowledge and capacities. However, if natural adaptation is not fast enough and intervention is necessary to pre-



## Phytoteratology monsters in becoming.

See explant tissues  
bred in a sterile gelified medium,  
the vital material  
onto which she sprinkles her endocrinological essence.  
They are

Sex hormones, isolated from her urine,  
assist the process of somatic embryogenesis;  
the making of a seedless  
vegetable fetus,  
the tainted conception of the Other,  
which might or might not be  
found amongst the bestiary of evolution.

The sinless phytoteratology lends a plantlet  
shaped by the infonutritive capacity of the



vent human extinction, two more plausible scenarios come to mind: to survive, humans may (i) alter the immediate environment they live in (creating “environmental bubbles” such as space stations), (ii) biotechnologically alter their biological constitution to adapt to the new environment. The first would imply a drastic reduction in population and redistribution of wealth among the survivors, whereas the latter approach implies a biotechnological modification of humans.

The modification, molding of our biological selves alongside the environment should not be perceived as intrusive and novel. Human culture has greatly amplified the capacity for niche construction and the ability to modify selection pressures. In comparison to other mammals, hominids (including humans) have evolved more in response to self-constructed selection pressures (that is the culturalized environment) and less in response to selection pressures that stem from independent factors in their environment, leading hominid populations to become increasingly divorced from local ecological pressures (Laland et al., 2001). For example, human-induced pollution may provoke new technology to remove environmental contaminants, thus counteracting the change in the genetic selective environments for species across relevant ecosystems (Kendal et al., 2011). Similarly, drug treatments to prevent diseases may relax genetic selection for disease resistance or susceptibility. In short, humans have reached the stage of evolution where their culture (including technology) is by far outrunning biology and is the predominant form of adaptation.

#### Coming to terms with tera-

Terrabiology is an artistic discourse, which frames an ontological perspective on life on Earth, contemplates the position of the human within the terraformative system and understands the human culture as an epiphenomenon of the self-aware species. It is an attempt to form a theoretical vantage point extraneous from Earth as a biosphere. The prefix terra

can be read as terra, pertaining to the Earth, or as tera, derived from teras, the Ancient Greek word for monster. The latin word terra refers to the fact the discourse is centered around the ontology of life on Earth. Tera implies the fear of otherness (symbolized by monsters), a challenge to be overcome when undergoing the transition from a hegemonic essentialist approach to species to the concept of fluidity and multiplicity contained within categories, which become heuristic ascriptions rather than being descriptions of reality. Terrabiology thus questions the human disposition in relation to fundamentally different forms of organization, which can yield successful systems exhibiting life-like properties. The category of the discriminated Other changes according to context (not male, not heterosexual, not abled, not human, not living, and so on), but it is exemplary for a human, who defines him/herself by what he/she is not (Heidegger, 1962). An intentional shift of perspective from the exclusionary to an inclusive one facilitates a change in the motivation and rationale of the human's scientific endeavors. The study of the Other is more evidently a study of the same. The subjectivity in research can no longer be considered an adverse effect, as the observer is not only WITHIN the system he/she observes, but IS the (same type of) system.

The teratope is the figurative transformation of our biosphere marked by a rupture in the occidental culture-nature essentialism, which has been failing to maintain its elementary order amongst the bestiary of forms and functions coaxed into existence by developments in both mimetic and synthetic biotechnology. In the teratope we continuously tread untested grounds: the possible, the desired, the intimidating, and the monstrous combine to yield increasing anxiety about the future – a future of know-nots, not knowns. Anxiety as the dominating social affect is internalized, feeding off of the perceived individual guilt and responsibility while causing debilitating arrest reminiscent of powerlessness and alienation. The proliferative quality of the loss

of bearing is underappreciated, deterritorialization is perceived as threatening rather than liberating. Pursuing humanistic values and holding on to old classifications is inept, because it does not acknowledge those were coined in a different era with different societal tasks to fulfill.

The teratope lacks a temporal dimension, because its span of geological time is insignificant in comparison to the trauma of unveiling humanness as one of the many, but not more than, natural phenomena. It speaks of our perception of its monstrosity, but in deep time the current state is just another a trial (and perhaps error) on a global scale, one actualization of the infinite adjacent possibles. Due to this, the teratope does not have the anthropophagic ecological significance as the Anthropocene does. In the teratope there is no room for human hubris, but significant potential for reframing.

To achieve emancipation from the sentiment of 21st century biopolitics we should immunize against the xeno. We have to claim the alien of the contemporary experience as our own. To learn to love our monsters, they are monstrous only in the eye of the beholder.

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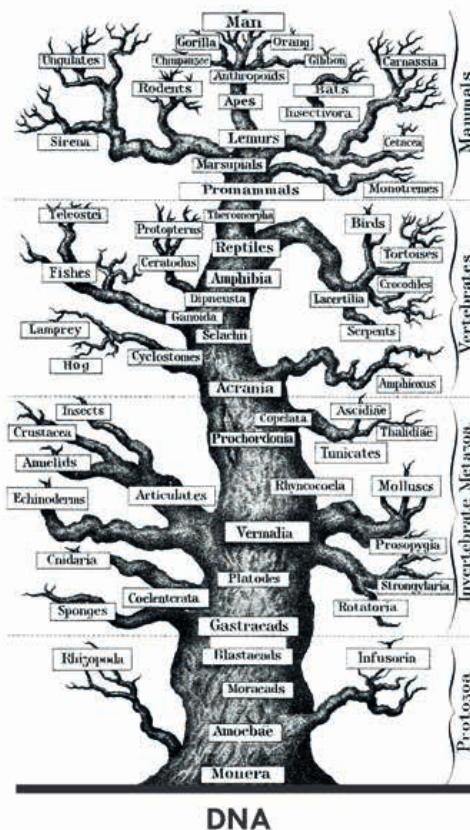
## HUMAN XENOBIOLGY

BY EWEN CHARDRONNET **Author**

“Xenobiology (XB) is the endeavor to overcome the constraints imposed by evolution on natural living organisms. It is an emerging field in the context of synthetic biology, encompassing the design, generation and evolution of alternative forms of life” says the preliminary statement of the first international conference on xenobiology organised in Genoa in may 2014 (1).

Synthetic biologists define Xenobiology as the study of any life-form departing from natural terrestrial life, whether on Earth or elsewhere. A “Xenobiont” being any creature departing from natural terrestrial life. Most of their field of research is based on the Xeno nucleic acids (XNA), a synthetic alternative to the natural nucleic acids DNA and RNA as information-storing biopolymers that differs in the sugar backbone.

Xenobiologists find DNA four-letter genetic alphabet relatively limited. Recent breakthrough of a genetic code of six XNAs rather than the four naturally-occurring DNA nucleotide bases has yielded endless opportunities for xenobiologists in genetic



novel information-storing biopolymer is “invisible” to natural biological systems and raises an opportunity to implement a genetic firewall that impedes exchange of genetic information with the natural world, making it a biosafety tool. Schmidt writes “Just as the Earth lost its place as the center of the universe, or men lost its unique status in the animal world, our natural world could lose its unique status as being synonymous with ‘life’”. And “Creation of ‘alien’ or ‘weird’ life in the laboratory, in other words, advances in xenobiology research, will not only contribute to a better understanding of the origin of life, but will definitely expand our capabilities to provide safer biotechnology production tools for human and environmental needs. Future life forms that are orthogonal to natural life forms, such as those based on XNAs, could represent the ultimate biosafety tool” (2).

### The greedy algorithm of natural selection

A greedy algorithm is an algorithm that follows the problem solving heuristic of making the locally optimal choice at each stage with the hope of finding a global optimum. In many problems, a greedy strategy does not in general produce an optimal solution, but nonetheless a greedy heuristic may yield locally optimal solutions that approximate a global optimal solution in a reasonable time.

For xenobiologist Philippe Marlière, “natural selection is a poor algorithm of optimisation, akin to greedy algorithms in the computer world”. He considers the limitations of the greedy algorithm that presided to the elaboration of natural species. According to him “All molecular structures, all the Noah’s Ark, show us that we are in a local minimum”. Following this logic “All natural species and their molecular devices are imperfect and improve locally within a narrow combinatorial horizon. Evolutionary breakthroughs and radical metabolic innovations will have to be designed and enforced”. Then come the questions : “What is the minimum genetic cost for bifurcating away from the terrestrial biodiversity? How to access other possibilities living worlds while preserving human health and mature habitats?” (3)

## SHADOW LIFE – SHADOW BIOSPHERE

Paul Davies is a physicist, astrobiologist and early activist of the Search for Extraterrestrial Intelligence (SETI) program. In his book *The Eerie Silence: Renewing Our Search for Alien Intelligence* (Mariner Books, 2011) he has suggested that if life has evolved on Earth more than once, microorganisms may exist on Earth which have no evolutionary connection with any other known form of life. He states that if scientists discover an alternate form of microbial life on Earth, the odds are good that life is common elsewhere. “Shadow life”, as Davies calls it will be easiest to find if it lives in niches too inhospitable for even the hardest of microbes. The upper atmosphere, bombarded in ultraviolet light, and boiling hot deep sea volcanic vents are two possibilities.

If shadow life lives among us, scientists will need to look for organisms that break the rules of known biochemistry. For instance, all known terrestrial life builds its proteins out of amino acids with left-handed chirality orientation (chirality). Organisms that use right-handed amino acids could very well be alien.

Since all life stores its genes in RNA or DNA built from five kinds of chemical letters (RNA replaces thymine with uracil), shadow life might write their genomes using another code, or another kind of chemical. Along these same lines,

shadow life could build itself out of chemical elements unused by other life. Putting aside previous speculations on the idea that silicon could replace carbon in any life form, shadow life supporters rather think that arsenic might make a good substitute for phosphorous, which links together individual DNA letters and stores cellular energy.

A broad multidimensional understanding of the chemistries of life and the planetary processes that shape their evolution and development is now ascendant, driven by the xenobiology research to explore and extend the boundaries of what we call living. When these environmental niches and planetary processes become more diverse and extreme, how might these chemistries differ from what we currently know? Researchers are in pursuit of the answers through a top-down, systems-biological survey of extreme environments and identification of their associated biochemical signatures; a bottom-up, systems-chemical investigation of emergent lifelike behavior from inanimate yet dynamic chemical networks; and work at the “Golden Spike”, the interface of inanimate and living matter, to explore the landscape of alternative biochemistries and their potential origins here and elsewhere in the universe.

There is a whole “shadow biosphere” to be discovered – or to be created by the xenobiologists of the biotech industries.

In their first international conference in Genoa, xenobiologists depict themselves as Christopher Columbus discovering the Americas. What does that kind of simplistic metaphor mean? Simplistic “obscurantist” question could be then asked to these “heuristic conquistadores unhindered by their lack of navigation instruments”: if one third of the emerged lands were not “discovered” by Europeans at the time of Columbus, do they mean that they are going to populate the planet with no more than one third of new aliens forms of life? What will the

third land in the potential triangular trade of the “greedy” enlightened xenocapitalists after the discovery of the new xenobiological land?

(1) - <http://xb1genoa.com>

(2) - “Xenobiology: A new form of life as the ultimate biosafety tool”, Markus Schmidt, Bioessays, 2010 Apr; 32(4): 322–331.

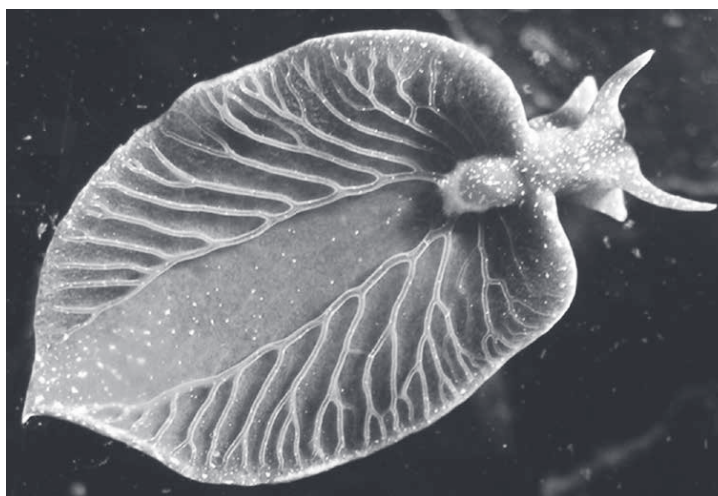
(3) - “Théorie et pratique de la xénobiologie”, Philippe Marlière, Institute of Systems and Synthetic Biology, Evry, France. Communication on march 11, 2015, at Collège de France.

## BECOMING-PHOTOTROPH

BY ALIENS IN GREEN artist group

In a december stand-alone short story (1) science-fiction writer Kim Stanley Robinson get a glimpse of a very green future through the lens of a Supreme Court transcript. In an era where iGEM(2) Registry of Standard Biological Parts grew much larger, the synthetic biologists found biobricks in the catalog that could be combined to make a synthetic chloroplast and created photosynthesizing human cells. They modified tattoo needles to inject chloroplast-fibroblasts into human skin, in the manner of an ordinary tattoo. They formed an LLC called SunSkin but soon they decided to go Open Source, photosynthesis being a natural process.

“Once they published the recipe, and the knowledge spread that human photosynthesis worked, the injection method as such became what you might call generic. (...) when you photosynthesize sunlight you will be less hungry. You might also spend more of your day outdoors in the



Elysia chlorotica is one of the “solar-powered sea slugs”, utilizing solar energy via chloroplasts from its algal food. (Illustration: Clesley Good for Robinson’s Cal argument)

What would be this Great Crash / Jubilee caused by people feeding directly off the sun’s energy? Crash of food production and consumption; over-exploited agricultural lands reverting to natural ecosystems; rates of starvation, malnutrition,

life of the biosphere?

By its accomplishment man would free himself from living matter. From a social heterotrophic being, he would become an autotroph.

The repercussion of this phenomenon within the biosphere would be immense. It would signify the

process.

By this achievement, human understanding would produce not only a great social effect, but a global geological change".

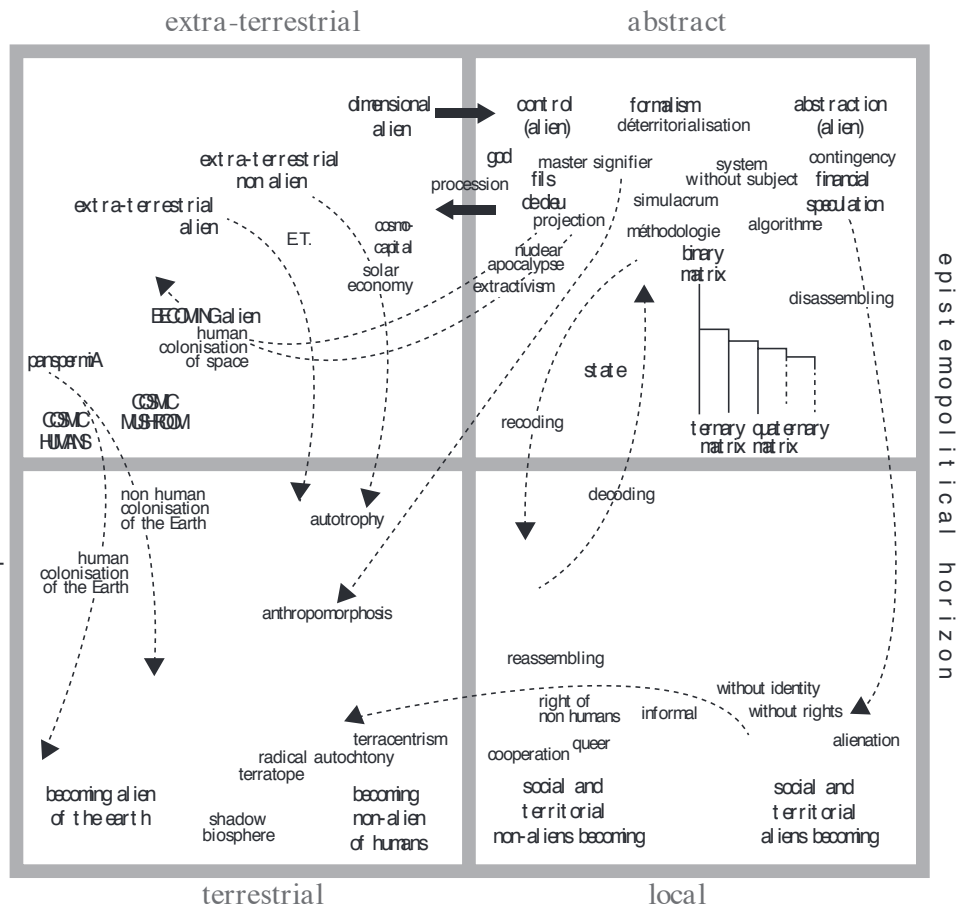
Vladimir Vernadsky, *Human Autotrophy*, 1925.

The capability of some marine animals to take advantage of photosynthesis by hosting symbiotic algae has been known indeed since the late 19th century. This capacity, referred to as photosymbiosis, is based on structural and functional complexes that involve two distantly unrelated organisms. These stable photosymbiotic associations between metazoans and photosynthetic protists play fundamental roles in marine ecology as exemplified by reef communities and their vulnerability to global changes threats (3). An association between a host (multi- or unicellular) and an "algal" photosymbiont represents, in principle, a "domestication" of photosynthesis that can result in a trophic independence as long as the partners are located in the euphotic zone in view of the infinite source of solar energy (4).

Here we introduce the photosymbiotic tidal acol flatworm, *Symsagittifera roscoffensis*, and its obligatory green algal photosymbiont, *Tetraselmis convolutae* (Lack of the algal partner invariably results in acol lethality emphasizing the mandatory nature of the photosymbiotic algae for the animal's survival). Together they form a composite photosymbiotic unit. Studies beginning in the late nineteenth century at the marine biological station of Roscoff (Britanny, France – giving its name to the worm) by its director Yves Delage centered on the origin and the role of the enigmatic "green cells" inhabiting the body of *S. roscoffensis* (thought to be chloroplasts because of starch accumulation and oxygen production) (Delage, 1886) (5). The enigmatic green photosynthetic corpuscles ("zoochlorellae") were unambiguously ascribed to the algae in the detailed studies of Keebles and Gamble (1905, 1907) (6). These authors documented their substantial set of original experiments and observations on the biology, ecology and behavior of *S. roscoffensis* and the associated symbiosis in a book entitled *Plant animals, a study in symbiosis*, 1910 (7).

### From Symbiogenesis to Endosymbiosis

Beside being director of the marine biological station at Roscoff, Yves Delage was Professor of Zoology, Anatomy and Comparative Physiology at the Sorbonne. He had written one of the great texts reviewing and criticising 19th century theories on the cell, heredity and variation: *La Structure du Protoplasma et les Théories sur L'Hérédité et les Grandes Problèmes de la Biologie Générale* (1895) (8). His 1896 book with E. Hérouard, *Traité de Zoologie Concrète: la Cellule et les Protozoaires* (9) was one of the few protozoology texts of its time. Together with the anarchist neo-Lamarckian biologist, Marie Goldsmith, Delage edited the journal *L'Année Biologique* (10) which kept biologists abreast of recent contributions, reviewing them with their own commentary. One of the early neo-Lamarckians in France, Delage was always on the lookout for alternative theories to neo-Darwinism; and he maintained a longstanding interest in symbiotic theories of the cell.



Aliens in green

Two Plasmas as the Basis of Symbiogenesis", a "New Study or the Origins of Organisms", arguing that plants' predecessors co-opted chloroplasts - which were once free-living bacteria - an evolutionary story that happened billions of years ago.

After the World War One, Russian botanist Boris Kozo-Polyansky was the first to explain the theory in terms of Darwinian evolution. In his 1924 book *Symbiogenesis: A New Principle of Evolution* (12) he wrote, "The theory of symbiogenesis is a theory of selection relying on the phenomenon of symbiosis". These theories were first dismissed or ignored, but the idea of symbiogenesis was reflected half a century later in the modern endosymbiotic theory developed and popularised by the zoologist and geneticist Lynn Margulis after her theoretical paper entitled "On the Origin of Mitosing Cells". While recognising Darwin's contributions, Margulis totally rejected the modern evolutionary synthesis (13), strongly arguing against Neo-Darwinism. She explained that certain interpretations of Neo-Darwinism that she felt were excessively focused on inter-organismic competition, as she believed that history will ultimately judge them as comprising "a minor twentieth-century religious sect within the sprawling religious persuasion of Anglo-Saxon Biology" (14). She also believed that proponents of the standard theory "wallow in their zoological, capitalistic, competitive, cost-benefit interpretation of Darwin - having mistaken him. Neo-Darwinism, which insists on [the slow accrual of mutations by gene-level natural selection], is in a complete funk" (15). She opposed competition-oriented views of evolution, stressing the importance of symbiotic or cooperative relationships between species.

### Animal-plants today

Many studies in marine biology have been done

the *Elysia chlorotica's* chromosome. This gene makes an enzyme that is critical to the function of the chloroplasts, which are typically found in plants and algae.

It has been known since the 1970s that *Elysia chlorotica* "steals" chloroplasts from *Vaucheria litorea* (called "kleptoplasty") and embeds them into its own digestive cells. Once inside the slug cells, the chloroplasts continue to photosynthesize for up to nine months—much longer than they would perform in the alga. The photosynthesis process produces carbohydrates and lipids, which nourish the slug. How the slug manages to maintain these photosynthesizing organelles for so long has been the topic of intensive study and a good deal of controversy. The Woods Hole scientists confirmed that one of several algal genes needed to repair damage to chloroplasts, and keep them functioning, is present on the slug chromosome. The gene is incorporated into the slug chromosome and transmitted to the next generation of slugs. While the next generation must take up chloroplasts anew from algae, the genes to maintain the chloroplasts are already present in the slug genome.

There is no way on earth that genes from an alga should work inside an animal cell. And yet here, they do. They allow the animal to rely on sunshine for its nutrition. So if something happens to their food source, they have a way of not starving to death until they find more algae to eat.

This biological adaptation is also a mechanism of rapid evolution. When a successful transfer of genes between species occurs, evolution can basically happen from one generation to the next, rather than over an evolutionary time scale of thousands of years.

Microbiologists at the Marine Biologie Station in Roscoff have also been studying the possible occur-



backpack using light-harvesting pigments called carotenoids. And the oriental hornet might use a similar trick, utilizing a pigment called xanthopterin to convert light energy to electricity. But neither of these creatures are truly photosynthetic—both lack the critical ability to turn carbon dioxide into sugar.

A single vertebrate, the spotted salamander, has been proved to use algae to solar-power its embryos as they develop inside eggs. Normally, our immune systems would destroy any foreign algae that tried to enter our bodies. The salamander gets away with it for two possible reasons. Firstly, the algae invade before its immune system has fully developed. Secondly, salamanders have strangely inefficient immune systems. This might account for their incredible ability to regenerate lost body parts, but it could also mean that they recognise their own cells in a very different way to other animals. Perhaps this lax self-recognition opened the door for invading algae (17).

Synthetic biologist designers such as Christina Agapakis, had spent a lot of time thinking about how to engineer new symbioses, including animal cells that can do photosynthesis. In a recent popular experiment, Christina Agapakis et al. explored potentialities of what would happen on a shorter timescale by the injection of photosynthetic bacteria in zebrafish embryos. The fish do not die, and neither the bacteria. If *E. coli* - even dead ones - would be injected the embryos would die within an hour. But when injecting photosynthetic bacteria, the fish would still grow (18).

It is a fascinating demonstration of biological versatility. But it's a far cry from creating, de novo, an organism that lives off the sun. The trouble is it takes a heck of a lot of surface area to capture enough sunlight to make a meal. With leaves, plants are able to harness an enormous amount of solar energy relative to their size. Thick, fleshy humans, with our low surface-area-to-volume ratios, probably don't have the necessary bandwidth.

If we humans wanted chloroplasts for ourselves, or our livestock or pets, we would need to genetically modify the host animal to express proteins required for chloroplast function. It has been estimated that about 70-90% of the genes required for chloroplast function are provided by the plant's genome (Martin et al., 1998) (19).

It would probably be most feasible for chloroplasts, along with the required genes, to be added to skin stem cells and applied as a skin graft, as there is a lot of research in this area for burns victims. This approach has been used to produce proteins in mice (Larcher et al, 2001) (20), and so should be feasible for producing sugar by photosynthesis in humans. At first this graft may require regular replacement, but eventually the chloroplasts will be sustainable within the skin.

As in S.K. Robinson sci-fi short story, the photosynthesising skin would necessarily be green, and us, little green men/women. Eventually other pigments could be engineered. The plant-person (or algae-person (21)) would also need a lot more water than a normal human.

So, although photosynthetic humans would need less food, it wouldn't be substantially less. Still, researchers argue that, over a large population, it could slightly reduce the need for farmland; and that this process could be done to livestock too, and with a large number of livestock that could noticeably reduce the area of land required to feed cattle or horses.

Of course it would work better for "green sacred cows", but what would happen to hairy animals like sheep, as the hair would reduce the light available for photosynthesis? Here we're going into fantasy land.

NOTE 1 - Oral Argument, Kim Stanley Robinson, retrieved Jan, 21, 2016 from <http://www.tor.com/2015/12/07/oral-argument-kim-stanley-robinson/>

(2) - The International Genetically Engineered Machine (iGEM)

Competition Foundation organises every year student competition in Synthetic Biology.

(3) - Photosymbiosis represents around 50% of marine photosynthesis.

(4) - "The chimerical and multifaceted marine acoe Symsagittifera roscoffensis: from photosymbiosis to brain regeneration", Xavier Bailly et al., *Frontiers in microbiology*, Volume 5 | Article 498, 2014

(5) - "Études histologiques sur les planaires rhabdocoeles acoeles". *Arch. Zool. Exp. Gén.* II 4, 109-160.

(6) - Keebles, F., and Gamble, F. W. (1905). "On the isolation of the infecting organism ("Zoochlorella") of *Convoluta roscoffensis*". *Proc. R. Soc. Lond. B* 77, 66-68. doi: 10.1098/rspb.1905.0059; Keebles, F., and Gamble, F. W. (1907). "The origin and nature of the green cells of *Convoluta roscoffensis*". *Q. J. Microsc. Sci.* 51, 167-217.

(7) - Keebles, F. (1910). *Plant Animals, A Study in Symbiosis*. Cambridge: University Press.

(8) - Retrieved Jan. 17, 2016 from <http://gallica.bnf.fr/ark:/12148/bpt6k5701548j>

(9) - *Traité de Zoologie Concrète: La Cellule Et Les Protozoaires*, Yves Delage, Edgard J. E. Hérourard, Nabu Press, 2010

(10) - <http://gallica.bnf.fr/ark:/12148/cb32694956m/date>

(11) - *Die Erscheinung der Symbiose*, Heinrich Anton de Bary, Strasbourg, 1879

(12) - *Symbiogenesis, A New Principle of Evolution*, Boris Mikhaylovich Kozo-Polyansky, Ed. Lynn Margulis, Harvard University Press; 1 edition (June 15, 2010)

(13) - Julian Huxley invented the term in his 1942 book, *Evolution: The Modern Synthesis*.

(14) - "Lynn Margulis: Science's Unruly Earth Mother", Mann, C (1991), *Science* 252 (5004): 378-381.

(15) - *Ibid.*

(16) - Schwartz JA, Curtis NE, and Pierce SK (2014) "FISH labeling reveals a horizontally transferred algal (*Vaucheria litorea*) nuclear gene on a sea slug (*Elysia chlorotica*) chromosome". *Biol. Bull.* 227: 300-312.

(17) - "Intracellular invasion of green algae in a salamander host", Ryan Kerney et al., 2011, *PNAS*, April 19, 2011 vol. 108 no. 16. <http://www.pnas.org/content/108/16/6497>

(18) - Towards a Synthetic Chloroplast", Agapakis et al., 2011; retrieved from DOI: 10.1371/journal.pone.0018877

(19) - "Gene Transfer from Organelles to the Nucleus: How Much, What Happens, and Why?", William Martin and Reinhold G. Herrmann, *Plant Physiol.* (1998) 118: 9-17.

(20) - "A cutaneous gene therapy approach to human leptin deficiencies: correction of the murine ob/ob phenotype using leptin-targeted keratinocyte grafts", Fernando Larcher et al, *The FASEB Journal* vol. 15 no. 9 1529-1538

(21) - For a Xenogenesis scenario, see *investigative contemporary art project "humalga"* by Špela Petric and Robertina Šebjanec (2012) <http://robertina.net/humalga/>

## COSMIC ECOLOGY VS EARTH ECOLOGY BY BUREAU D'ETUDES

According to Jürgen Habermas "the resurrection of nature cannot be logically conceived within materialism". Let's abandon the anthropomorphization of nature, abandon the resurrection of nature by man. New relationships between human and nonhuman are established. The term "human" as an abstract and general entity, separated from nature, as the producer of a cosmic and eschatological project, is in crisis. Human is no longer the resurrected resurrecting nature. It is no longer that denatured entity denying nature with its work and preparing, with this negation, the Great Metamorphosis.

Is it therefore about a human return to animality (the animality mentioned by Kojève in the note to his lessons about the Hegel's *Phenomenology of Spirit*)? Abandoning it's eschatological pretensions, is the human organism no more than a bacterial group like other animals or plants, though, unlike the latter, colonized by an alien: technics, abstraction?

Technics here would refer to the alien producer

nics is xeno-, outside nature. So would it be the emanation of a transcendent, a-cosmic, power? But technics is not outside nature. That's why it cannot save (nature through resurrection), nor be saved (from its own demonic character). It does not fit into an eschatology.

"On its own, says the Gospel of Mark, the Earth bears fruit" (Mt 4.26 to 29). Earth is an *automata*. The difference, born of language and technics, between organic and mechanical automaton does not matter here. Technoscience, and the non-organic automatons that it creates, seems to be part of a non-terrestrial project, cosmic circumstances conflicting with earthly circumstances. Indeed, in terms of cosmic space and time, what does the madness of plutonium matter?

Alien is thus the cosmos threatening the ecology of the Earth. And non-alien, all that participates in the ecology of the Earth. Alien is to the non-alien what cosmic ecology is to the ecology of the Earth.

In political terms, the alien is to the non-alien



## INTERGALACTIC BIOPOLITICS

Medical examinations appear to have been an element of the UFO phenomenon almost from the very beginning. When the science of ufology appeared, the phenomenon of UFO was associated with green aliens from the deep space, studying planet Earth with scientific or military purposes. At the end of the 20th century, ufologists started talking about the intention of extraterrestrial beings to obtain the human genetic material.

Elizabeth Larer (1988) - UFO was one of the

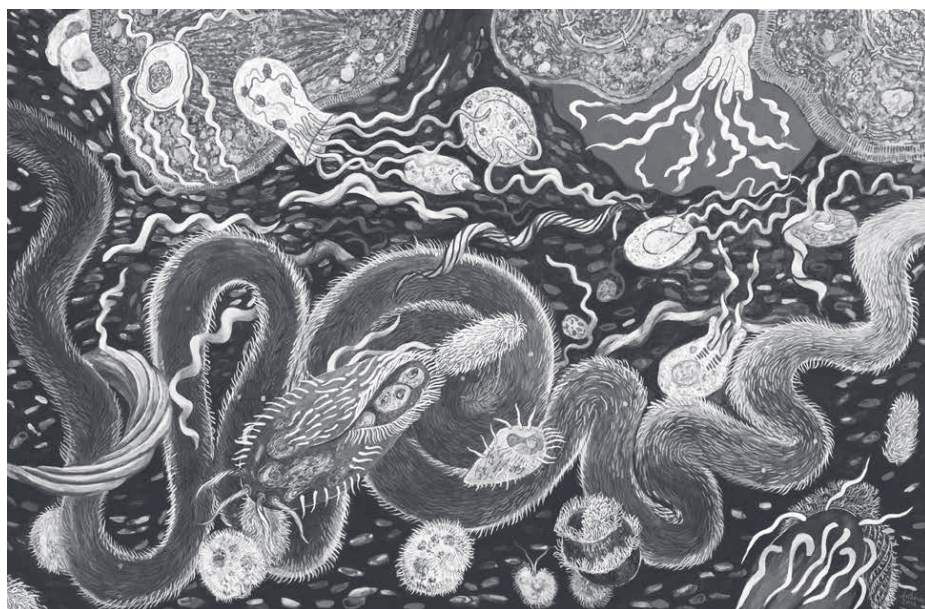
# 09 CHTHULUCENE MANIFESTO FROM SANTA CRUZ <sup>(1)</sup>

BY DONNA HARAWAY **zoologist**

Perhaps it is time to write a "Cthulucene Manifesto." "My" Cthulucene is the time of mortal compositions at stake to and with each other. This epoch is the kainos (-cene) of the ongoing powers that are terra, of the myriad tentacular ones in all their diffracted, webbed temporalities, specialities, and materialities. Kainos is the temporality of the thick, fibrous, and lumpy "now," which is ancient and not. The Cthulucene is a now that has been, is now, and is yet to come. The Cthulucene is a relentlessly diffracted time-space (remember Karen Barad on quantum fields in *Meeting the Universe Halfway*). These powers surge through all that are terra. They are destructive/generative and in no one's back pocket. They are not finished, and they can be dreadful. Their resurgence can be dreadful. Hope is not their genre, but demanding response-abilities might be. Terran forces will kill fools who provoke without ceasing. Killed but not gone, these fools will haunt in tentacular ongoing destruction.

The chthonic powers, both generative and destructive, are kin to Bruno Latour's and Isabelle Stengers's Gaia, even though their Gaia's are not at all identical to each other. But for all three of us, Gaia and its kin are not mother; they are snakey gorgones like the untamed and mortal Medusa; they do not care about the thing that calls itself the Anthropos, the upward looking one. That upward-looking one has no idea how to go visiting, how to be polite, how to practice curiosity without sadism (remember Vinciane Despret and Hannah Arendt). In the Anthropocene (a naming I have come to need too), the chthonic entities can and do join in accelerating double-death provoked by the arrogance of the industrializers, super-transporters, and capitalizers, in seas, lands, airs, and waters. In the Anthropocene the tentacular ones are nuclear and carbon fire; they burn fossil-making man, who obsessively burns more and more fossils, making ever more fossils in a grim mockery of earth's energies. In the Anthropocene, the chthonic ones are active too; all the action is not human, to say the least. And, written into the rocks and the chemistry of the seas, the surging powers are dreadful. Double death is in love with haunted voids.

The chthonic ones can and do infuse all of terra, including its human people, who become-with a vast motley of others. All of these beings live and die, and can live and die well, can flourish, not without pain and mortality, but without practicing double death for a living. Terran ones, including human people, can strengthen the resurgence (Anna Tsing's kind) of vitalities that feed the hungers of a diverse and luxuriating world. The Cthulucene was, is, and can still be full of what Anna calls 'Holocene resurgence', or 'feral biologies'—i.e., of the ongoingness—of a wild, cultivated and uncultivated, dangerous, but plentiful earth for always evolving critters including human people. Mixed and dangerous, the Cthulucene is the temporality of our home world, terra. The Cthulucene is never one;



«Endosymbiosis, tri-öte to Lynn Margulis», Choshanah Cherner, [www.cyclemuse.com](http://www.cyclemuse.com)

and coral reefs flourished, which were allied to fungal materialities and temporalities in very different ways.

The Anthropocene will be short. It is more a boundary event, like the K-Pg boundary (Cretaceous-Paleogene boundary), than an epoch. Another mutation of the thick Kainos is already coming. The only question is, will the brevity of the Anthropocene/Capitalocene/Plantationocene "boundary event" be because double death reigns everywhere, even in the tombs of the Anthropos and his kin, or because multi species entities, including human people, made potent alliances in time with the generative powers of the Cthulucene, to power resurgence

and partial healing in the face of irreversible loss, so that rich worldings of old and new kinds took root? Compost, not posthuman...

The Cthulucene is full of storytellers. Ursula LeGuin is one of the best, in everything she wrote. Hayao Miyazaki is another; remember *Nausicaä of the Valley of the Wind*. And then go to the Inupiaq online game *Never Alone*. Watch the trailer! (2)

With these storytellers, my next manifesto must be *Make Kin Not Babies!*

(1) Revised from "Donna Haraway and Cary Wolfe in Conversation," in *Winter 2015*, to appear in *Manifestly Haraway* (University of Minnesota Press, 2016).

(2) <http://neveralonegame.com/>



*Flyover of the factory in the Hague by Greenpeace (2011).* In 2011 the factory in the Hague had more than 100 tons of plutonium in storage, enough for about 1000 atomic bombs. Assuming that 10 millionth of a gram of plutonium is a lethal dose, these 100 tons of plutonium are potentially 10 billion lethal doses. (Can-DeCies 2014, a condition nucléaire. 2014) On sur la situation atomique de l'humanité, 2014, p. 100

This is the fundamental passion of atomic pleasure: to be no more of this world, to be an extraterrestrial. It is significant that the desire to be the Earth, our only common home, for another planet emerged during the atomic era: on the one hand it is an emergency exit and, on the other, this fantasy transcends the terrestrial human condition. The nuclear condition is fundamentally the total negation of the human condition in so much as it depends on air, water, plants and other animals

*AlienationZone, Pripyat, Ukraine.* The zone of alienation, which is variously referred to as the Chernobyl zone, the 30 km exclusion zone, the zone of exclusion, or the fourth zone is the 30 km exclusion zone around the site of the Chernobyl nuclear reactor disaster. The nature of the area seems to have not only survived, but flourished due to significant reduction of human impact, and the zone is considered a classic example of an involuntary park

Populations of traditional forest animals (like wolves, wild boar and the European bison, and beaver have multiplied enormously and began expanding outside the zone. Even extremely rare lynx have appeared. Tens of people (mostly the elderly) refused to be evacuated from the zone or illegally returned there later. This population includes some vagabonds and other marginalized persons from the outside world, such as war refu-



# XENOFEMINIST ECOLOGIES (RE)PRODUCING FUTURES WITHOUT REPRODUCTIVE FUTURITY

BY HELEN HESTER (LABORIA CUBONIKS) **philosopher**

The subject of xenofeminism is neither woman nor human, if these terms are understood as suggesting discrete entities snipped from the wider fabric of technomaterial existence. Instead, xenofeminism is interested in the assemblages within which social agents are embedded. This is evident throughout our recent manifesto, "Xenofeminism: A Politics for Alienation" – a text that seeks to be very much alive to the entanglement and co-constitution of silicon-based and carbon-based actors. It makes frequent reference to current technoscientific conditions, from online solidarity networks, to the hyperstitional phenomenon of the stock market, to suggestive but embryonic advances in open source medicine. In so doing, the manifesto points to some of the many ways in which technological alteration might generate forms of radical alterity. 'Nature', meanwhile, emerges as a recurrent force in the text – not as a naturalizing or essentializing underpinning for gender and eco politics, but as an always already technologized space of contestation that fundamentally shapes lived experiences. 'Nature' (not least as it is manifested in gendered embodiment) is viewed as a space of experimentation – not a fact to be accepted but a terrain of negotiation to be actively contested for. This is captured in the manifesto's ultimate call to action: 'In the name of feminism, 'Nature' shall no longer be a refuge of injustice [...] If nature is unjust, change nature!' (Laboria Cuboniks, 2015: n.p.). I am starting with this outline both in order to emphasize the position from which I am articulating my ideas, and because a lot of what I want to discuss here takes this position as an implicit reference point.

Xenofeminism, as a political and theoretical project, is distinctly future-oriented, tracing emerging developments in technology and the post-human in order to imagine a world beyond current understandings of gender, race, and class. However, aside from our (relatively brief) reflections upon globalized technocultures, our work has yet to really engage with the Anthropocene. To put it another way, we have been theorising the future (not to mention various senses of 'Nature') without reflecting on the conditions for biological existence upon which any future-oriented project would obviously depend. With this paper, I want to start to rectify this framing our queer, technomaterialist transfeminism in terms of ecology and debates about human population. The points I'm making here are intended to be provocative rather than prescriptive, and they are certainly looser and more gestural than I would like. However, the ideas contained here mark an early gesture in a commitment to a longer-term project – one that I hope will be viewed as an invitation to discuss, engage, and construct a better xenofeminism.

that the focus of said activism should be preserving things for future generations, and that it should be framed primarily as an effort to protect 'our' children's rightful inheritance. For Edelman, the contemporary world is characterised by a reproductive futurism in which the 'Child remains the perpetual horizon of every acknowledged politics, the fantasmatic beneficiary of every political intervention' (2004: p. 3). As he puts it, we encounter 'the disciplinary image of the Child [...] on every side as the lives, the speech, and the freedoms of adults face constant threat of legal curtailment out of deference to imaginary Children whose futures, as if they were permitted to have them except as they consist in the prospect of passing them on to Children of their own, are construed as endangered by the social disease as which queer sexualities register' (Edelman, 2004: p. 19). The needs of adults – particularly non-reproductive adults – are constantly subordinated to those of children, as bearers of the idea of the future. Edelman's primary examples of this phenomenon are rampant cultural homophobia and so-called 'pro-life' activism.

When we think the future, which is largely the terrain of politics, he feels that we inevitably perpetuate a culture laudatory of the child, and therefore supportive of ideologies of the family that are both hetero- and homonormative. Whilst heterosexual sex or the monogamous, dyadic relationship form are socially sanctioned via the 'alibi' of biological and social reproduction, the queer comes to represent the 'violent undoing of meaning, the loss of identity and coherence, the unnatural access to jouissance' (Edelman, 2004: p. 132). It is the irredeemable, unrecoverable other. The only proportionate response to this state of affairs is, for Edelman, refusal – the refusal of politics, the refusal of the future, the refusal of the Child. Those beyond the sanctified confines of heteronormativity are, according to his analysis, to embrace the death drive and to become what reproductive futurism has already decided that they are – just a bunch of selfish queers.

Edelman's work is quite clearly a polemic, gleefully spooking the straights and denouncing the 'fascism of the baby's face' (2004: p. 75). As such it is perversely seductive – not to mention seductive in its

perversity – and compellingly, charmingly, spiteful. It also alerts those of us with an interest in eco-queer perspectives to some of the risks inherent in framing the future. Think of the imagery used to promote the People's Climate March in London, New York, Paris and elsewhere. On posters spread across urban transit networks, we encounter an ethereal nymph-child, clutching a toy windmill whilst staring wide-eyed into the future. In positioning what we do as agitating on behalf of generations to come, we may unwittingly participate in the cult of the Child that is so central in determining which lives are prioritized and whose needs are seen to matter. However, the limitations of the argument for refusal and withdrawal sketched out in *No Future* are quite clear. What does it mean to cede the entire territory of politics to 'family values'? What are the implications of celebrating 'the act of resisting enslavement to the future in the name of having a life' (Edelman, 2004: p. 30)? Living for the now and saying 'fuck the future' hardly seems like an apt response to impending ecological disaster – and indeed, the fact that Edelman's analysis largely proceeds via queer readings of classic Hollywood cinema suggests that such crises are not really within his purview. He's not actually considering the brute reality of the contemporary Anthropocene here, so perhaps it is unfair to frame his argument in these terms; and yet, the undesirable implications of *No Future* remain.

Nina Power is amongst those who have sketched out objections to this account of reproductive futurity. She points out some of the ways in which Edelman's seemingly radical position plays into existing structures of neoliberalism, remarking that 'capitalism depends upon the reproduction of sameness in the guise of difference, the idea that there is no alternative, and [that] no future (in the sense of new ways of living) is possible' (2009: p. 2). She also comments that Edelman's conflation of politics-with-the-future-with-the-child does not hold in every situation: 'the question of a "queer" (that is, non-futural) resistance to communal relations has in fact been an issue for various twentieth century political movements. There have been various kinds of 'queer' resistance to the organising principle of heteronormativity, which have at the same time been explicitly political projects' (2009: p. 8). Pow-



Human popul at ion growt h

60 000

Species Ext inct ion



er gives the example of the kibbutz movement – to which we might add numerous forms of eco queer activism and theory. Alexandra Pirici and Raluca Voinea's work on the "Manifesto for Gynecene" is one helpful signpost here – a project that advocates for a move towards care, whilst indicating that any imaging of the future is not merely about protecting our children but is in fact key to fostering a collective politics.

(...)

In acting on behalf of future generations, we must be careful not to foster 'the supreme value of species survival as a discursive technology of compulsory heterosexuality' (Sheldon, 2009: n.p.). As I have suggested, to the extent that we frame our activism as protecting the earth for 'our' children, we risk promoting restrictive, exclusionary, and xeno-inhospitable notions of whose existence counts. Most obviously, by indirectly privileging lines of genetic descent and cultural inheritance, such approaches are distinctly speciesist – neglectful of the many other forms of life upon which environmental change might impact. How, then, can we think reproduction – even just in the sense of ensuring the survival of others into the future – without also reproducing the worst of reproductive futurity?

At this point, I would like to turn to the work of Donna Haraway, who has done so much over the years in terms of helping us to view our species within its wider biological and technomaterial context. In an article for *Environmental Humanities* published earlier this year, Haraway offers us a new slogan for an era of climate crisis: 'Make kin not babies!' (2015: p. 161). This is, quite clearly, a slogan of two parts: perhaps the easiest to grasp directive is the suggestion that we, as a species, reduce our birth rate. Official UN population projections now suggest that the number of people inhabiting the planet will pass the 10 billion mark by the end of the century, contributing to significant problems in 'food availability and affordability' (2011: n.p.). Studies suggest that this situation may be significantly exacerbated by the environmental crisis, with climate change resulting in global crop yield losses of up to 30% by 2080 (Hallegatte et al, 2016: p. 4). There are understandable fears that the carrying capacity of particular regions may be exceeded, as local environments approach the maximal population load that they can support. This would risk detrimental effects not just on human lives, but on other species as well – hence Haraway's suggested check on fertility. 'Over a couple hundred years from now,' she muses, 'maybe the human people of this planet can again be numbered two or three billion or so, while all along the way being part of increasing well being for diverse human beings and other critters as means and not just ends' (2015: p. 162).

(...)

In the areas of immigration, technological development, and regenerative labour, then, one sees the potential benefits of making kin not babies. In the longer term, Haraway's injunction could generate further emancipatory effects. To eschew the deliberate extension of one's genetic line – to engage in the pollarding of one's family tree – is to rethink modes of intimacy, sociability, and solidarity beyond the nexus of the nuclear family. In moving away from discourses of reproductive futurity, those parts of the social fabric which have abjected non-reproductive subjects as harbingers of the death drive will be unpicked and re woven into something less exclusionary and more hospitable to difference. This brings us on to the second part of Haraway's proposed slogan for the Anthropocene – making kin. This is the productive moment hitched to her rejection of the current order.



□ the moment of refugees crisis in Europe, Denmark prefers to produce a □opolitics of □ond heads with the campaign □it for Mom□ to encourage white □anes to go on holiday in a desperate □id to help □ost the country's falling □rth rate. □he campaign is aimed at older parents and recommends that they contri□ute to their adult children's getaways so that they can get a grandchild 'nine months later'.

and one which prompts us to rethink the existences and relationships that our politics tend to privilege. 'Kin' is the concept that Haraway mobilizes in an attempt cultivate this – an 'assembling sort of word' that speaks of solidarity beyond reproductive futurism (2015: p. 161). In calling for the making of kin, rather than the making of babies, we speak of a less naturalized, a less inward-looking, and less parochial form of both intra- and inter-species alliance (and as an ethos – a transmissible protocol for conceiving of the world – this can be adopted and practiced by both parents and non-parents alike). Such a call very much resonates with the 'xeno' in 'xenofeminism', I think.

We do need to qualify this rallying call not to make babies, however. When Edelman discusses what it means to 'resist the appeal of futurity, to refuse the temptation to reproduce' (2004: p. 17), he appears to rather sidestep the fact that biological procreation is not always an expressly planned or deliberately sought for process. Even if the provision of abortion was secure and the procedure itself culturally de-stigmatized, it seems likely that many pregnancies not chosen in advance would still, for various complex and sometimes personal reasons, be allowed to continue to term. And of course, who would want to step in to forcibly prevent people from having children? I can hardly imagine Haraway advocating for the imposition of fertility control upon the unwilling masses! Her demand must instead be seen as a call for the fostering of an ideological shift – that is, for an ambitious attempt to wrest hegemony away from reproductive futurity. Indeed, her vision of population reduction encompasses centuries rather than decades. As such, we need to marry any advocacy for the reduction of human population size with a commitment to acting in solidarity with the impregnable and with caregivers. This is especially crucial in the case of those whose access to the social capital of parenthood is drastically limited – the world's displaced, racialized, impoverished, queer, and otherwise stigmatized subjects.

There is reason to hope, perhaps, that a reorientation away from reproductive futurity and towards various models of kinship and xeno-solidarity might actually encourage a deeper hospitality towards these groups – that a generalized cultural rejection of the family line might be framed less as the dismissal of parents and guardians, and more as an act of solidarity with new arrivals of all kinds (from migrants to new species to the same women).

a queer activism underpinned by the enabling affect of hope. Indeed, the judicious mobilization of such a future-oriented affect may be necessary if we wish to create conditions that are hospitable to re-engineering a present that, for many human and non-human actors, is unbearable. Entertaining the possibility of emancipatory projects beyond reproductive futurity is important, I have argued, if we wish to develop a xenofeminist-inflected collective eco-politics – that is, if we wish to fight for the continued existence of all our alien kin. If xenofeminism wishes to develop a politics fit for the Anthropocene, it obviously needs to engage further with this issue of climate change and to insist upon the myriad interconnections between capitalism, gender politics, population, and ecology. With Muñoz, then, I assert that we must 'vacate the here and now for a then and there. Individual transports are insufficient. We need to engage in a collective temporal distortion' (2009: p. 185).

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# ALIEN

## THE REPARATION OR THE NOSTROMO OF THE EARTH

BY ÉMILIE NOTÉRIS **text worker**

Hester: Can I call you 'mom'?

Chanel: What?

Hester: Please? I feel so loved and protected by all of you.

Chanel: Wait, you wanna call all of us 'mom'? That's insane.

Chanel #5: And super confusing.

Chanel #3: Actually, it's a new pop culture term where young women, desperately in need of role models, call other girls they look up to 'mom.' Lorde's fans call her mom.

*Scream Queens*, episode 2 saison 1, « Hell Week », september 2015.

In a novel entitled "From a flight over London", published in 1950, Virginia Woolf delicately described a flight over the city of London and how this distance from the Earth modified her way of seeing the world, just as the first images of our planet seen from space, in 1972, shook our vision, awakening the feeling of a global responsibility. An adventure told with precision and emotion that evaporates immediately on landing, (« in reality, the flight didn't take place »). Today it's not possible to pretend the flight didn't take place, as if we didn't know the responsibility that weighs on us and the distance from purely economic and material interests that it demands. We still need to identify what exactly this responsibility is.

So we propose a narrative and theoretical launch so that nobody can complain later that the flight never took place.

The change brought on by the use of the term 'Anthropocene' for a geological period, the result of the impact of humans on the Earth, – even though the term has not yet been validated by the scientific community of the UISG which will meet in Cape Town in 2016 – requires a redefinition and a theoretical and feeling critique of ecology.

Although feminism has brought a lot to ecology through ecofeminist writing (including theory and science fiction), we can imagine going beyond Mother Earth in its original (archaic) sense through Queer theory which upsets gender tags such as the idea of Nature. As far as we're concerned, the focus on "being" rather than "having" which initiates the queering of ecology, authorizes the questioning of « (human nature) » itself and suggests the proliferation of new human natures, as narratives.

These new human natures could be considered as alien (transformation of ways of seeing, modification of points of view or observation, unsettling positions ...) as we remember the following definition: « Alien, person foreign to a context; animal or plant species which appears in a context not its own. » Is Earth the context of humans? Did man and woman just appear or were they created as the old stories tell us? Should we, in the redefinition that the idea of the Anthropocene is provoking, consider responsibility in terms of belonging?

One of the films that obviously includes, in its title as well as its theme, the problem of Mother Earth (or the mother ship) and the alien, is the horror film



Ripley goes from Alien survivor to Alien mother. This painting by Sébastien Chénier casts the action heroine as a saintly Madonna, cradling her Xenomorph baby.

connection can be made between Buckminster Fuller's earth-ship and Ridley Scott's mother-ship. As the philosopher Mathieu Potte-Bonneville accurately observes, to study *Alien* as a blockbuster situates it "in the ecosystem of the imaginary, in the food chain of possible narratives (1)". The catastrophic scenarios of the blockbusters run in parallel to real world climatic scenarios, the nourishment proposed for visual and theoretical absorption is unchanged and moves from one point to another along this food chain, calling for a new reading of its list of favourite ingredients, for the creation of a new recipe.

If an instruction manual exists today it is, without doubt, the "Universal Declaration of the rights of Mother Earth" written by Amerindian peoples in 2012 in response to the Universal Declaration of Human Rights. In Ridley Scott's film the instruction manual or navigation program is called "Mother". Everything in the topography of the places and the allusions implicit in the aesthetic of the film invest the spaceship with its archaic maternal characteristics, as the feminist theoretician Barbara Creed observes in the chapter on *Alien* in her book *The Monstrous Feminine* (2). « Although the archaic mother as a visible figure does not appear in *Alien*, her presence forms a vast backdrop for the enactment of all the events. She is there in the images of birth, the representation of the primal scene, the womb-like imagery, the long winding tunnels leading to inner chambers, the rows of hatching eggs, the body of the mother-ship, the voice of the life-support system, and the birth of the alien. ».

The encoded priority, as will be revealed later to the crew, is in fact to bring the alien back to Earth, even at their own expense. The true mission was present from the start as a subtext. When the film opens with the awakening of the 7 crew members to reply to a signal, recognized too late as a warning rather than a SOS, it opens with the true mission of the flight, to make contact with or ingest the alien on board the mother ship. It's here that the figure of Gaia is superimposed over the Mother of *Alien* "Three times, Earth gives decisive advice [...]: she insinuates, she indicates by words rather than signs, she also knows how to say everything clearly when necessary, but she always foresees, she conceives the designs that orientate decisively the unfolding of events".

How then to hear this message and carry out a healing reading of the horrific fiction proposed by Ridley Scott, leaving aside the double paranoid warning (that of Mother and the film itself)? What dance to invent then, following Bruno Latour who, in his intro-

duction" (4), thus reaffirming the power of positive affects to confront catastrophe. What, if not fleeing, should the steps of our dance be?

We could look for help in anthropology. For the Brazilian anthropologist Eduardo Viveiros de Castro, (5) our contemporary world is saturated with humanity, considered dangerous by the Amerindians, due to this humanity itself, in the metaphorical sense of the term. He proposes an anthropomorphism rather than an anthropocentrism, based on the principle that the best way of feeling connected to the future of our Earth is by infusing it with human qualities (a concern that stems directly from anthropomorphism). Anthropocentrism on the other hand leads to the errors of waste and misuse. Viveiros de Castro proposes adapting Winnicott's key concept of the sufficiently good mother – rather than the perfect and the horrific – to that of Mother Nature, of Gaia. A sufficiently good Earth rather than a perfect one. The search for perfection leads without failure to psychosis, even to horror.

(1) - Mathieu Potte-Bonneville, *Sons of a pitch. Prequels, sequels, Aliens et autres rejeteurs*, in *Blockbuster*, Philosophie et cinéma, dir. Laura Odello, Les Prairies Ordinaires, 2013.

(2) - Barbara Creed, *Horror and the Archaic Mother*, in *The Monstrous Feminine*. Film, Feminism, Psychoanalysis, Routledge, 1993.

(3) - "Although the archaic mother as a visible figure does not appear in *Alien*, her presence forms a vast backdrop for the enactment of all the events. She is there in the images of birth, the representation of the primal scene, the womb-like imagery, the long winding tunnels leading to inner chambers, the rows of hatching eggs, the body of the mother-ship, the voice of the life-support system, and the birth of the alien."

(4) - Marcel Détienné, *Apollon le couteau à la main*, cité par Bruno Latour, « Gaia, figure (enfin profane) de la nature » in *Face à Gaia, huit conférences sur le nouveau régime climatique*, la Découverte, 2005.

(5) - Ynestra King, "If I Can't Dance in Your Revolution, I'm Not Coming", 1989.

(6) Eduardo Viveiros de Castro, *Economic Development, Anthropomorphism, and the Principle of Reasonable Sufficiency* in ed. Pasquale Galiardi, Anne Marie Reijnen, & Philipp Valentini, *Protecting Nature, Saving Creation, Ecological Conflicts, Religious Passions, and Political Quandaries*, Palgrave Macmillan, 2013.





## ALIEN CITIZENS

WHO IS WHO'S ALIEN ?

A POLITICAL QUESTION

Let's speculate about passports being made and issued to alien entities. Would they only be issued by the little green men that Men in Black are taking care of? Wouldn't they also be useful to the "unidentified migrants" and sans-papiers who spread over Europe just like UFO's? The field of questions opened by the notion of alien also opens the question of the limits of political institutions, and what Hannah Arendt called non-humans; having no status, and therefore no rights. Gathered together at the border, from now are economical migrants, political refugees, climate refugees, cosmic refugees, interstellar castaways and inter-dimensional survivors.

### BI-NATIONAL IN SCHENGEN SPACE : THE LATVIAN NON-CITIZENS CASE

Non-citizens in Latvian law are individuals who are not citizens of Latvia or any other country but, who, in accordance with the Latvian law "Regarding the status of citizens of the former USSR who possess neither Latvian nor other citizenship", have the right to a non-citizen passport issued by the Latvian government as well as other specific rights. Approximately two thirds of them are ethnic Russians, followed by ethnic Belarusians, ethnic Ukrainians, ethnic Poles and ethnic Lithuanians.

Children born after Latvia reestablished independence (August 1991) to parents who are both non-citizens are entitled to citizenship upon request of at least one of the parents.

While the issue of non-citizens is often related to the problem of statelessness, other sources consider that the status of non-citizen in both Latvia and Estonia is unique and has not existed previously in international law. "Non-citizens" of Latvia enjoy a one not afforded to citizens of being able to travel to both the Schengen Area (where citizens of Latvia can travel visa-free, too) as well as Russia, without the need for a visa."

Wikipedia, retrieved January 11, 2012



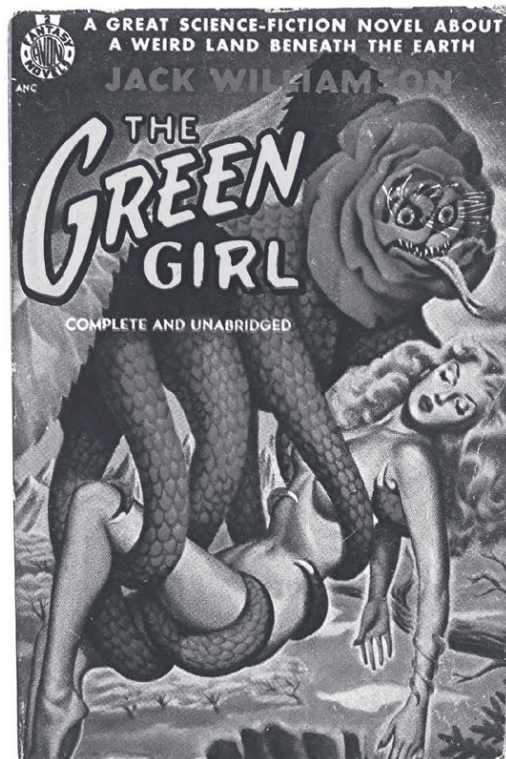
## ALIEN CITIZENS, 60TH YEAR OF METALAW

Metalaw is a legal concept closely related to the scientific Search for Extraterrestrial Intelligence (SETI). First conceived by pioneering space lawyer Andrew G. Haley in 1956, Metalaw was the term Haley coined to refer to fundamental legal precepts of theoretically universal application to all intelligences, human and extraterrestrial.

In 1956, Haley published an article entitled "Space Law and Metalaw - A Synoptic View" (1), in which Haley first proposed his

others in different frames of reference . . . To treat others as we would desire to be treated might well mean their destruction. We must treat them as they desire to be treated." According to Haley, we can project only one principle of human law onto our possible future relations with ETI: "the stark concept of absolute equity."

It is clear the metalegal precepts Haley proposed are squarely rooted in natural law theory and flow from Kant's Categorical Imperative in a largely deductive manner rather than being drawn empirically from actual human legal institutions in an inductive fashion. Despite this, Haley acknowledged the obvious anthropocentric limits of natural law theory but could not ultimately divorce Metalaw from this intellectual construct. This failure led former Smithsonian general counsel George Robinson to note that the cultural concept of rules or law is itself anthropocentric (2). Robinson urged space lawyers, when engaging in metalegal research, to adopt an empirical approach similar to that used by cultural anthropologists. Robinson proposed an empirical analysis of Metalaw by studying human values formed with respect to totally alien concepts and potential situations, in particular "in all bio-ecological and cultural regimes wherein categories of relationships occur and may be distin-



The Green Girl by Jack Williamson (1956) is one the first "green" alien occurrence in science-fiction and great transformation literature.

"Elvin Kane has been seeing a vision of a green girl since



## xeno note1 economy

### XENO-MONEY

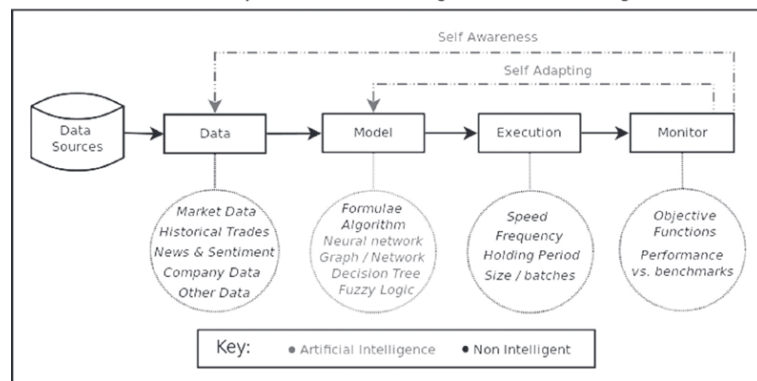
It was in the early 1970s that a fundamental shift took place in the financial practices that underpin and create the circulation of money-signs. What occurred then was an historically unique confluence and structural integration of four separate monetary phenomena, none of which was novel, but which together created a multi-billion dollar a day global money market and a radically new highly volatile, world monetary order. A realistic description of the workings of these phenomena --floating rates of exchange, an inconvertible world currency, the growth of off-shore money in the Euromarkets, the emergence of secondary markets in financial futures/options contracts-- would need much esoteric discussion that lies far outside the scope of this [text] (...) For 'Euro' and 'dollars' one should write 'xeno' and 'money' respectively. The Eurodollar has long since shed its attachment to Europe. It is, in fact, no longer geographically located but circulates within an electronic global market which, though still called the Eurodollar market, is now the international capital market. And its attachment to dollars is denominational rather than actual: not only can all currencies be swapped instantaneously in and out of the dollar, but there is also a growing volume of other instruments within this new market, such as Eurobonds, issued in Yen, Deutschmarks, Ecus and so on. (...) As a sign one can say that xenomoney, floating, and inconvertible to anything outside itself, signifies itself. More

specifically, it signifies the possible relationships it can establish with future states of itself. Its 'value' is the relation between what it was worth, as an index number in relation to some fixed and arbitrary past state taken as an origin, and what the market judges it will be worth at different points in the future. For what it signifies to be a market variable, and for it to be 'futured' in this sense as a continuous time-occupying sign, xenomoney must be bought and sold in a market that monetises time; a market in which there exist financial instruments that, by commoditising the difference between the value of present money (spot rate) and its future value (forward rate), allow 'money' to have a single time-bound identity. In the early 1970s, the appropriate instruments, that is tradeable financial futures and options contracts, came into prominence in the Chicago Financial Futures Market. (...) [Xenomoney] being floating and inconvertible, is forced as a sign

to create its own significance: one which is written in the only terms available to it, namely future states of itself. Xenomoney is thus a certain kind of meta-sign. Recall that the scandal of paper money for its detractors was its ability to increase the supply of money, in effect to create unlimited money, at the same time as the promise that it carried, to deliver palpable, uncreatable specie, denied this possibility. Xenomoney, by making no promise to deliver anything, avoids such double dealing. Its scandal, if such exists, is the fact that it is a sign which creates itself out of the future.

This reflexivity of xenomoney is already implied by its independence, that is money governed by purely financial dynamics, from the physically determined constraints of underlying trade. (Brian Rotman, *Signifying Nothing: The Semiotics of Zero* (New York: St. Martin's Press, 1987))

### Conceptual Model of Algorithmic Trading



## xeno note2 economy

### ARCHEOLOGY OF CAPITAL

#### GOLD, METALS AND SOLAR ECONOMY

##### The Extraterrestrial origin of Capital (a): Earthly yield of the Solar Economy

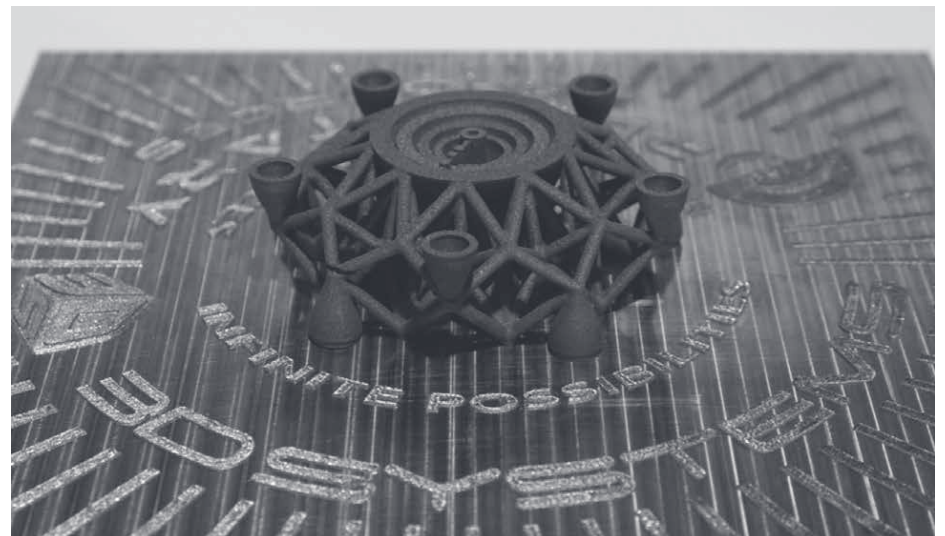
Breathing, a manifestation of the sun's shining, controls the multiplication of terrestrial organisms. The production of organisms depends on the intensity of light and heat from the Sun.

"The movement of multiplication is the reflection of a sun ray. Indeed, breathing itself, the gaseous exchange between life and the surrounding atmosphere, is a manifestation of the energy of this same ray" (1).

"The change provoked by the multiplication always takes place rhythmically. This change corresponds to the annually repeated oscillations of the environment. It is closely connected to the rhythmical movements of the Ocean. These movements of the Ocean, tides, temperature changes, saltiness of evaporation, intensity of sunlight, are all of cosmic origin" (2).

##### The Extraterrestrial origin of Capital (b): Metalization

Gold, and numerous other precious metals such as platinum, palladium or iridium, is of extraterrestrial origin. Two hundred million years after its formation, the Earth was heavily bombarded by meteorites containing different alien materials, amongst which was gold. This theory was confirmed in September 2011 by a team of geochemists from



Planetary Resources and 3D Systems turned a meteorite into a 3D print. The space mining legislation signed into law by President Barack Obama gives US space firms the right to own and sell natural resources mined from asteroids and other space bodies.

The act represents a full-frontal attack on settled principles of space law which are found in international agreements including the Outer Space Treaty of 1967 and the Moon Agreement of 1979. Planetary Resources CEO Chris Lewicki believes we'll need to figure out how to build and manufacture in space. "Instead of manufacturing something in an Earth factory and putting it on a rocket and shipping it to space," Lewicki mused, "what if we put a 3D printer into space and everything we printed with it we got from space?"

layer four meters thick.

Although the earth's core abounds with gold, this metal has become valuable because it is rare on the earth's surface. Mathias Willbold and his team from the School of Earth Sciences in Bristol (UK) explain the presence of gold on the earth's surface by a "late bombardment" of smaller meteorites, some

a metal very similar to gold, was detected which enabled them to calculate the weight of meteoric matter on Earth.

Matthias Willbold: "Our work shows that the majority of precious metals upon which our economies and numerous strategic industrial processes are based appeared by coincidence when the Earth was struck by about twenty billion billions of tons of asteroids"

## ASI-H-COMPUTER. ADAM SMITH'S INVISIBLE HAND COMPUTER

**T**adeusz Szuba (University of Cracow), author of the model for the phenomenon of collective intelligence, proposes a theory - that Adam Smith's Invisible Hand metaphor is an occurring phenomenon that can be formalized, simulated and most probably used to propose all-new tools to analyze and predict markets in the future.

The proposed theory claims that the Invisible Hand is a symptom of the existence of another dimension of a market, which is of computational nature. A market and its agents are unaware of this, because only piece(s), or result(s) of this symptom can be observed. In this dimension, the nature of a market and agents creates a complete, programmable computer on the platform of brains of agents and the physical structure of the market. This computer is self-programming and since it exists and functions on the platform of market agents' brains, results of computations are outputted via the brains of agents and represent themselves as the behavior of a market.

According to this theory, the Invisible Hand is much more powerful and universal than Adam Smith and contemporary economists even expected.

"Adam Smith's statements provide a clear hint on how to transform humans as market elements, into "business-thinking and planning virtual processor". Using this processor under concept of molecular model of computations, we are able to convert a market into a specific, nondeterministic, parallel computer. It is an altogether different kind of computer, when comparing it to its digital counterpart - it is most probably much more powerful, but on dif-

ferent scale. It does not use 0/1 Boolean algebra, but rather logic as basic calculus, while processors move around a computational space - they do not take fixed positions. Moreover, computations are driven by an abstract "value" - not by an operating system. This computational nature is very much like a second side of a coin, or another dimension of a market. This idea leads to the perception and formalization of Adam Smith's Invisible Hand (ASI-H) as a computer: ASI-H-computer. It is a self-programming computer able to perform computations not only for market optimization & stabilization, but also acting as "discoverer" of e.g. new technologies necessary for market (technical optimization). The ASI-H-computer is specific for each market, since it reflects the given market's nature and mentality of agents. There is also a high probability, that social behavior rules can be discovered by the ASI-H-computer (social optimization). Threads of ASI-H-computer calculations are not visible by a single agent, since the agent participates only in one or just a few steps of such calculations. Only economists can identify the architecture of this computer and what computations are performed. Perceiving a market as "thinking subject", will lead to the discovery of completely different tools for market analysis and prediction. It is foreseen that firstly economists, with the help of computations theorists, will construct a simulation model of an ASI-H-computer for a given market (approximation). Next, this model will be investigated on what it can calculate, how quickly and in what manner it reacts to market disturbances, etc. The ASI-H-computer concept will imply much theoretical research. In general, the ASI-H-computer is similar to swarm-computer (ants, honeybees); however, agents are much more intelligent". ("Formal and computational model for A. Smith's Invisible Hand paradigm as basis for all new tools for market analysis and prediction", Tadeusz Szuba, communication at the University of Toulouse 1, may 5, 2015).



"The ENIAC ( Electronic Numerical Integrator And Computer) was the first general-purpose computer, a digital Turing-complete machine built in secret during World War Two. In the fall of 1945 Manhattan Project computer scientists went to design a calculation that would determine the likelihood of being able to develop a fusion weapon. Edward Teller, the "Martian of Science", used the ENIAC results to prepare a report in the spring of 1946 that answered this question in the affirmative".

## ADAM SMITH'S INVISIBLE HAND OF JUPITER

**"The history of capitalism is an invasion from the future by an artificial intelligent space that must assemble itself entirely from its enemy's resource"** (Nick Land, « Machinic Desire », Textual Practice, vol. 7:3, 1993, p. 479)

In The History of Astronomy (written before 1758) Adam Smith speaks of the invisible hand, to which ignorants refer to explain natural phenomena otherwise unexplainable:

Fire burns, and water refreshes; heavy bodies descend, and lighter substances fly upwards, by the necessity of their own nature; nor was the invisible hand of Jupiter ever apprehended to be employed in those matters.

In The Invisible Hand of Jupiter (1971), Alexander L. Macfie provides an insight on Adam Smith's conception of the relationship between divine guidance, the system of nature and human behavior. For Macfie the Scottish Enlightenment had made interpretations of history close to the one of Giambattista Vico who was separating the age of gods, the age of heroes and the age of men. For Macfie, Adam Smith's Invisible Hand of Jupiter symbolises the capricious and uncomprehensible intervention of Antiquity's gods, linked to an age of "superstition". Adam Smith's definition of the "invisible hand" would be then more suitable to the idea of God or Supreme Being that developed in the XVIIIth century and to the conservative force that gravitates towards natural order.

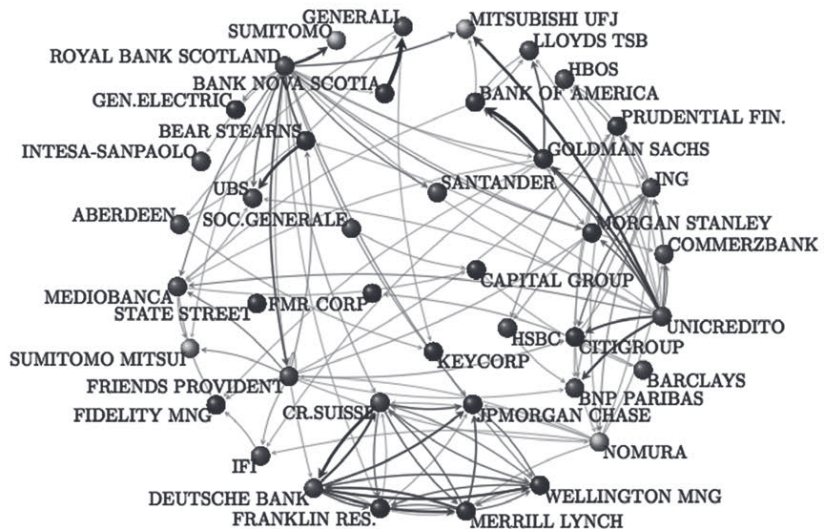


image from Clefania Citali, Games Cattfelder, and Clefano Cattiston (2011) The Network of Global Corporate Control

## MUSHROOM-MASTER OF GLOBAL CORPORATE CONTROL

The control class is that which, consciously or unconsciously contributes to achieve the goals of the alien capitalism. The graph uses a Swiss study that carried out the first investigation about the architecture of the international ownership network, along with the calculation of the level of control held by each global players. This study shows that, on a sample of about 30 million economic actors contained in the Orbis 2007 database, 737 holders accumulate overriding control over 80% of the value of all transnational corporations, and almost 40% of 43 060 global transnational corporations are controlled by a small number of actors.



# ALGORITHMIC TERROR AND THE WEALTH OF PLANETS

AN INTERVIEW WITH EL IBLIS SHAH

BY KONRAD BECKER [World-Information.net](http://World-Information.net)

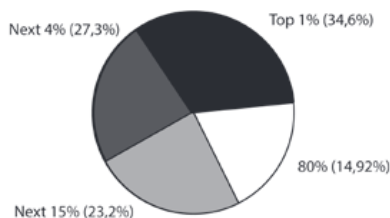
**K**onrad Becker of [World-Information.net](http://World-Information.net) meets with the elusive author of "Cannibalistic Capitalism and Alien Algorithms" to discuss algorithmic regimes and the politics of code and machines. El Iblis Shah's research on control and deception technologies focuses on encoding belief in symbolic representations and human sacrifice. On his way from the Middle-east's fertile crescent to the "Conference on Classification and Violence" in Athens, the secretive wizard of dissent comments on infectious powers of alien formulas, the rise of a new cult and its rule of terror.

**Konrad Becker** The new decision sciences confluent with rational choice theory and the algorithmic prediction industry have an impact comparable to Nostradamus - not just in the context of managing capital but all human affairs. You trace this cult of scrying the future to the Science of War and Mutually Assured Destruction?

**El Iblis Shah** Alongside the construction of trans-continental missiles and the nuclear standoff between the US and the USSR, the Sputnik shock and militarization of outer space, concepts like game theory promised solid tools for tactical and strategic decisions. From an Air Force expanded warfare program, RAND developed its then unique product of "System Analysis" to impress military elites with illusions of objectivity. At the dawn of the cybernetic control revolution, new decision technologies established a regime of knowledge production, channeling democratic decision making towards a specific agenda. By mapping perception through the lenses of their systems, Cold War rationality creates worlds and social theories turn into social facts. RAND, the first US think-tank, became a breeding ground for a self-replicating cult at the center of American Cold War efforts. Think-tanks use epistemological leverage to muscle into the central processes of control.

**KB** Decision tools for warfare from a science of military strategy were transferred to the domestic front and the hands of policy makers. These ideas spread from cybernetic ballistics and military management science to an overarching ideology of internalized control?

**EIS** War sciences in the RAND Corporation stimulated research on social control devices. Practices in the military-industrial-academic complex spread to civilian public policy. From the Pentagon and the management of wars to the parliaments and World Bank, decision technologies invaded the halls of power. Calls for a rationalization of society and its control by reason are always closely linked with social engineering and Cold War elites saw management as gateway to fundamental political and economic change. In defining the conditions to which rational agency must conform, rational choice is normative prescriptive and descriptive in all forms of decisions. Behavior is only considered rational



Health distribution in the United States by net worth (The net wealth of many people is negative because of debt).

How time compressed is the postbiological intelligence substrate likely to be, relative to human culture? Consider the millionfold difference between the speed of biological thought (roughly 1000x slower than chemical diffusion in and between neurons) and the speed of electronic "thought" (speed-of-light electron flow). In self-aware postbiological systems, the dynamics of human thought and culture may be so slow and static in comparison that we will appear as immobilized in space and time as the plant world appears to the human psyche. Cosmos culture. Cultural evolution in a cosmic context. Ed. by Even Oric and Oar Oipisella, OOOO OOOO

**KB** So the vision is that this science reveals objective universal law, based on reason, which is not relative to cultural milieu, and grounded in an inviolable superiority of unique individual preferences?

**EIS** Western milieus invested in regimes of rationality are characterized by a wild confusion on the meaning of reason. But models of game theory, decision theory, artificial intelligence and military strategy, replace judgments of reason with algorithmic rules of rationality. By the early 1950s, reducing intelligence, decision-making, strategic planning and reasoning to algorithmic rules spread to psychology, economics, political theory, sociology, and philosophy.

**KB** Is this a just a religious rendering of classical economic theory on steroids? Is it a technocratic update on Adam Smith and political theories of self-interest that became part of western civilizations since the Renaissance and the Enlightenment?

**EIS** Rational choice methodology emerged from the paranoid Cold War milieu of engineering, behavioral sciences and social control more than economic theory. It is a turn away from human sentiments and sympathy towards formulas where deeply authoritarian worldviews are veiled behind the rhetoric of natural liberties. The concept of a rational citizen is established by a set-theoretic definition, a grid of pairwise comparisons excluding social utility. Political decisions and accountability are not in the equations, a public arena of orientation towards social good for the benefit of all is rendered nonsensical by an impossibility theorem. Anti-human formulas of mutually assured destruction implemented for social welfare replace deliberation on the wellbeing of all with economic mechanisms to favor sociopathic individual wealth. A bipolar Cold War turned into today's rhizoid code wars - to control the planet's biomass and its species. In its theater of classification, elements defined as rational are set under the guidance of a mythical invisible hand. Unsurprisingly this hand did not invest into technologies for the people but in devices for controlling and exploiting humans as caloric engines. Individual self-interest came to be the way to design hominoid robots - just define the self and then calculate the interest.

a deep contempt of democratic processes collude towards models of a "rationally" managed society. After the implementation of decision making systems in military and government a proof of the soundness of its practices became difficult and impractical. However, in this crusade there is no need for explanations since its logic is understood to be beyond the grasp of the common people and electorates. Based on an objective science representing the absolute truth of given universal laws, there is no necessity for proof and human objections become obsolete. Grinding bodies and minds, cascading capitalist data processes serve alien appetites for blood sacrifice.

**KB** How did a cannibalistic cult of capitalism become the dominant belief system and western society trapped into a regime of cyphers?

**EIS** When alien automatons reconstruct the planet as a cosmic trap and by definition you don't see it. When humans reach out, synchronizing personal cascades of meaning with collective illusions, it creates inroads for viral attacks on individuals. Charms of Arab numbers and Vedic zeros from the east invaded human hosts, the infosphere of the planet cracked open for their blind and vengeful signs. Accountants trained to think in non-human fashion turned into hexed double bookkeepers for invisible forces beyond reason; compartmentalized bureaucrats converted into slaves of alien logic. In these cults there is no causation but big data correlations and judgement is the product of machines. From strange scripts with a life of their own, evil spells raise forces of destruction that render Earth a charred altar for alien idiot gods.

**KB** Confined to intellectual swamps infested by these cults, humanity seems to have become subject to eternally dissatisfied and irresponsible gods. What are the chances for escape?

**EIS** Data centers, high voltage shrines for evil eyes and the malevolent machinery of algorithmic prayer mills are networked cathedrals of necropolitical terraforming. Shrouded in "rational logic" from the ivory hills of madness, tin god tentacles of selfish genes drive cults of craved panic expanding





# 17 FUKUSHIMA LABORATORY

## "ACQUIRING ON EARTH THE TECHNOLOGY OF THE HEAVENS"

BY PABLO DE SOTO, **architect**

In the midst of the Fukushima nuclear crisis Atsushi Fujioka (professor of Economics, director of Kyoto Museum for World Peace and specialist on the nuclear economy, space and intelligence strategy) wrote "Understanding the Ongoing Nuclear Disaster in Fukushima: A Two-Headed Dragon Descends into the Earth's Biosphere" where he describes how he was struck by the prescience of something Takagi Jinzaburo (Citizens' Nuclear Information Center) pointed out after the Chernobyl accident in 1986:

"Nuclear technology is the equivalent of acquiring on earth the technology of the heavens.... The deployment here on earth of nuclear reactions, a phenomenon occurring naturally only in heavenly bodies and completely unknown to the natural world here on the earth's surface, is...a matter of deep significance. For all forms of life, radiation is a threat against which they possess no defense; it is an alien intruder disrupting the principles of life on earth. Our world on the surface of this planet, including life, is composed most basically of chemicals...and its cycles take place as processes of combination and dissolution of chemical substances.... Nuclear civilization always harbors in its womb a moment of destruction, like a ticking time bomb. The danger it presents...is of a kind completely unlike those we have faced before. And now isn't it the case that the ticking of its timer is growing louder

and louder in our ears?"

The ticking was not heard, and as anticipated by Akira Kurosawa in his 1990 film *Dreams*, the celestial fire burned in four of the reactors at the Fukushima Daiichi 1, emitting an estimated 260 tons of radio-isotopes to the biosphere, contaminating the Ocean, rivers, fields and forests, just 200 kilometers from the planet's most populous urban area.

As stated by John Downer from the Centre for Analysis of Risk and Regulation at the London School of Economics and Political Science, the 2011 meltdowns at Fukushima might have falsified long-standing expert assertions that nuclear power is 'safe', yet it has failed to do so. He explores in his paper "In the shadow of Tomioka. On the institutional invisibility of nuclear disaster" "the two core mantras of post-Fukushima nuclear discourse: (1) that nuclear meltdowns will not occur; and (2) that nuclear accidents are 'tolerable'. In each case, Downer outlines how accounts of the disaster shield the credibility of the wider nuclear industry; and it then explains why these accounts are misleading.

This anti-epistemology is produced by established networks and organizations that intentionally pursue their interests by cultivating the doubt, ignorance or false knowledge. In front of them are TEPCO, the operator of Fukushima Daiichi; IAEA (International Atomic Energy Agency), which tend to portray the nuclear catastrophe as a communication problem rather than public health; and Sinto Abe, the current militarist Prime Minister of Japan. Abe just passed Secrecy Law that threatens freedom press to publish critical information about the sector; while promoting Fukushima Prefecture as an innovation center for "specialized in disasters" robotics.

In April 2015, a drone with radioactive sand from the beaches of Fukushima mysteriously appeared on the roof of Abe's official residence to denounce the pro-nuclear government policy. Situated struggles continue against the re-start of the archipelago nuclear reactors. Occupy Kasumigaseki, the

Hydrangea revolution, the Friday protests in front of the Parliament of Japan, the Oi Nuclear Power Plant blockade are legitimate self-defense acts against the alien intruders, following Takagi's words. One of the meanings of Fukushima is being today's laboratory where humans will naturalize/normalize or not the nuclear catastrophe. A struggle for the reproductive commons. As stated by a woman drumming in the streets of Shinjuku in one of the many post-Fukushima marches: Reclaim Our Life! End the Nuclear Capitalism!

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ATOMS IN JAPAN. JAEA's Naraha Remote Technology Development Center Opens with Prime Minister Attending <http://www.jaif.or.jp/en/jaeas-naraha-remote-technology-development-center-opens-with-prime-minister-attending/>



Old Dreams, Ogesta Ocession, OOO

## NAUSICÄÄ AND THE PROPHECY OF REGENERATION

The backstory of the Japanese anime *Nausicaä of the Valley of the Wind* (Hayao Miyazaki, 1984) takes place a thousand years before the events of the film. Industrialization and excessive technological advances have led to the development of titanic warriors, half-organic, half-robotic. These giants escape the control of their creators and devastate the planet and its civilizations during the so-called "Seven Days of Fire". Only a small part of humanity survives. A toxic forest, the Fukai, develops on this polluted land, in which a new ecosystem of giant insects develops around the Omus (in Japanese, 王虫 Omu means "insect god").

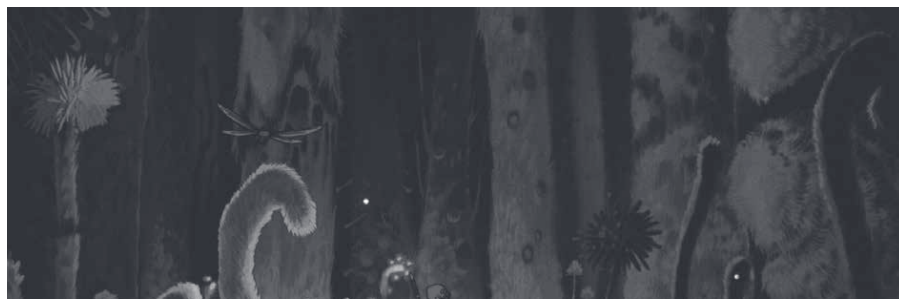
Industrial advances led to destruction and so now the inhabitants of Nausicaä's village live an "old" lifestyle, more modest, relying only on organic resources.

Miyazaki's inspiration for the Fukai forest and its new lifeforms was the disaster of Minamata: from 1932 and for over thirty years this petrochemical plant dumped heavy metals, including mercury, into the Bay of Kyushu in the southwest

detailed description and consistency give the viewer an impression of reality. The Fukai is full of giant mushrooms, bizarre jellies and plants that have no existing terrestrial equivalents. This "sea of corruption" can be considered as a single living being that reproduces uncontrollably and endemically through spores carried by insects and the wind. Everything that lives is highly toxic and harmful to the life forms of the ancient world. Yet in the Fukai, once the hallucinogenic strangeness of colors and shapes are accepted, we find light and life everywhere.

Nausicaä and her mentor Yupa are the only ones studying the ecosystem of the Fukai, trying to discover its origins and how it functions. Nausicaä appreciates it as it is and seeks solutions for the coexistence with humans. She then makes

a discovery about the toxic emissions: trees absorb the poisons deposited by the pollution of the "Seven Days of Fire", crystallize them and turn them into sand. This necessary synthesis, required for the purification of soil and water, generates the toxic emissions for which man himself is solely responsible. The birth of new species led by the Omus symbolizes the protection of nature in this project of decontamination. Arrogant and probably ashamed, humans did not communicate the origin and intensity of the pollution, which is why their descendants at the time of the film do not know what the Fukai really is. Mankind then seeks to destroy what appears to be a poisonous forest without understanding that it is really nature itself which, for a thousand years, has been cleaning up their errors.



# BLACK INFINITY

## OR, OIL DISCOVERS HUMANS

BY EUGENE THACKER **philosopher**

In 1964, the horror and fantasy author Fritz Leiber published a short story entitled "Black Gondolier," which appeared in the Arkham House anthology *Over the Edge*, and was subsequently reprinted in the Ace Double volume *Night Monsters*. In this story, an unnamed narrator tells of the mysterious disappearance of his friend Daloway, a recluse and autodidact living nearby oil fields in southern California. Daloway, it seems, began to develop a bizarre and unnatural fascination with oil — not just as a natural resource, and not just as something of geopolitical value, but with oil in itself as an ancient and enigmatic manifestation of the hidden world. Over time Daloway's conversations with the narrator begin to take on the form of mystical visions, described by Daloway as a kind of gothic, funereal ooze:

... that black and nefarious essence of all life that had ever been, constituting in fact a great deep-dug black graveyard of the ultimate eldritch past with blackest ghosts, oil had waited for hundreds of millions of years, dreaming its black dreams, sluggishly pulsing beneath Earth's stony skin, quivering in lightless pools roofed with marsh gas and in top-filled rocky tanks and coursing through a myriad channels ... (1)

The image of oil as stealthily waiting gives the ooze the vague quality of intelligence and intent — and, more specifically, of malefic intent. In Leiber's hyperbolic prose, oil is not the type of ooze that we see in Cold War monster movies, where the ooze remains hidden beneath the surface of the Earth. Instead, in "Black Gondolier" oil is described as an animate, creeping ooze that already is on the surface, and that immanently courses through all the channels of modern industrial civilization, from the central pipelines feeding major cities, to the individual homes and cars that populate those cities. At one point in the story, the narrator attempts to put Daloway's rather crackpot theories into coherent form:

Daloway's theory, based on his wide readings in world history, geology, and the occult, was that crude oil — petroleum — was more than figuratively the life-blood of industry and the modern world and modern lightning-war, that it truly had a dim life and will of its own, an inorganic consciousness or sub-consciousness, that we were all its puppets or creatures, and that its chemical mind had guided and even enforced the development of modern technological civilization ... (2)

"In brief," the narrator concludes, "Daloway's theory was that man hadn't discovered oil, but that oil had found man." (3)

At the center of Leiber's story is an inversion that takes place between human beings and an enigmatic, something else that constitutes a horizon for human thought. Let us call this "something else" the unhuman. The unhuman is not simply that which is not human, be it animals, machines, oceans, or cities, though all of these play a role in Leiber's story. The unhuman is also not that which is made human, in which case the unhuman would be the human made

What then is the unhuman? It is, first of all, a limit without reserve, something that one is always arriving at, but which is never circumscribed within the ambit of human thought. In Leiber's story, we see at least four stages by which one encounters the unhuman:

At the first level, we encounter the unhuman only as it exists for the human. This is the normative world of modern industrial capitalism described by Daloway in the story. At this level, the unhuman is everything that is for us and for our benefit as human beings, living in human cultures, and bearing some unilateral and instrumental relation to the world around us. This relation between human and unhuman relies upon an anthropic subversion. The unhuman is only that which exists within the scope of the human; in a sense, there is no outside of the human, in so far as the unhuman is always fully encompassed by human knowledge and technics. At this level, the unhuman is everything that is subject to and produced by human knowledge. At this level, anthropocentrism overlaps almost perfectly with anthropomorphism. But Leiber's story steadily moves towards a second level, which explores a notion of the unhuman through an inversion of the relation between human and unhuman. The key phrase in Leiber's story is the following: "man hadn't discovered oil, but ... oil had found man." We don't use oil, oil uses us. Note that a relation of unilateralism still exists, except that it has been reversed. Instead of human beings making use of the planet for their own ends, the planet is revealed to be making use of human beings for its own ends. Humans are simply a way for the planet to produce and reproduce itself. Clearly, with this sort of epiphany all bets are off — one can no longer regard the human endeavors of science, technology, and economy in quite the same way. But the terms of this relation are still "human" — intentionality, instrumental rationality, and even a touch of malice are attributed to the anonymous ooze of oil. It is as if the unhuman can only be understood through the lens of the human. We can call this the anthropic inversion. The anthropic inversion allows for a concept of the unhuman to emerge, but it is ultimately recuperated within the ambit of human categories, such as intelligence and intentionality. Towards the end of Leiber's story, this anthropic inversion undergoes another turn, leading to a third level where the unhuman is encountered. As Daloway is weirdly carried off into the viscous night where oil and nocturnal darkness merge into one,

effacing all horizon lines in a miasmatic, black blur, Daloway's own individuation slips away and is engulfed, and at this moment he realizes that the human categories of life, mind, and technics are themselves simply one manifestation of the unhuman. In other words, as opposed to the anthropic inversion (human don't use oil, oil uses humans), here Daloway experiences another kind of inversion, an ontogenic inversion in which everything human is revealed to be one instance of the unhuman. The ontogenic inversion is both ontological and ontogenetic, at once the evisceration of thought from the human, as well as an epiphany about the essentially unhuman qualities of the human. In the ontogenic inversion, the human is only one instance of the unhuman.

At this point thought falters, and here we enter a fourth stage that we can call misanthropic subtraction. At this point, thought falters, and language can only continue by way of an apophatic use of negative terms ("nameless," "formless," "lifeless"), which are themselves doomed to failure. This failure is leveraged with great effect in the literary tradition of supernatural horror and weird fiction. Authors such as Algernon Blackwood, William Hope Hodgson, and of course H.P. Lovecraft excel at driving language to this breaking point. Here one notices two strategies that are often used, often in concert with each other. There is a strategy of minimalism, in which language is stripped of all its attributes, leaving only skeletal phrases such as "the nameless thing," "the shapeless thing," or "the unnamable" (which is also the title of a Lovecraft story). There is also a strategy of hyperbole, in which the unknowability of the unhuman is expressed through a litany of baroque descriptors, all of which ultimately fail to inscribe the unhuman within human thought and language. Some examples from Lovecraft follow:

... the rayless gloom with Miltonic legions of the misshapen damned ...

... the nameless bands of abhorrent elder-world hierophants ...

... brooding, half-material, alien Things that festered in earth's nether abysses ...

... a pandemoniac vortex of loathsome sound and utter, materially tangible blackness ...

Often these two strategies — minimalism and hyperbole — dovetail into a singular epiphany concerning the faltering not just of language, but of thought as well. At the end of Lovecraft's story "The Unnamable," one of the characters, speaking to his friend Carter from a hospital bed, attempts to describe his





strange experience in the following way:

"No – it wasn't that way at all. It was everywhere – a gelatin – a slime – yet it had shapes, a thousand shapes of horror beyond all memory. There were eyes – and a blemish. It was the pit – the maelstrom – the ultimate abomination. Carter, it was the unnamable!"(4)

Taken together, these four stages of the unhuman result in a paradoxical revelation, in which one thinks the thought of the limit of all thought. At the level of the anthropic subversion – the first stage – this limit is present but hidden, occulted, and it remains unrecognized. At the level of the anthropic inversion – the second stage – this limit is brought into the foreground through a reversal of the terms, but not of the relation. But here the unhuman still remains hidden, something only known at best indirectly, through the ad-hoc use of human terms (such as sentience or intentionality or malice).

Proceeding from this, at the third level the ontogenic inversion produces a misanthropic realization, a realization that the unhuman exists antagonistically with respect to the human. This leads to the fourth stage, the misanthropic subtraction, in which the relation itself is reversed. Here the unhuman is not even known indirectly – and yet it is still intuited, still thought, but only via a thought that has been stripped of all its attributes. What is thought is only this absolute inaccessibility, this absolute incommensurability; what is affirmed is only that which is itself negation.

What results, then, is strange kind of epiphany, a realization that is, at its core, profoundly anti-humanistic. It is not just a realization about human knowledge and its relative horizon of the thinkable,



The Meshgah temple ceased to be a place of worship after 1945 with the installation of petroleum plants at Qara Qany. Petrochemical industry became endemic in the Qara Qany peninsula in Soviet Era.

but an enigmatic revelation of the unthinkable, or really, what we might call a black illumination. Black illumination leads from the human to the unhuman, but it is also already the unhuman, or one instance of the unhuman. Black illumination does not lead to the affirmation of the human within the unhuman, but instead opens onto the indifference of the unhuman (Lovecraft, in his letters, refers to his own position as "indifferentism.") The unhuman does not exist for us (the humanism of the unhuman), and neither is it against us (the misanthropy of the unhuman). Black illumination leads to the enigmatic thought of the immanence of indifference. The unhuman, at its

limit, becomes identical with a kind of apophatic indifference towards the human – at the same time that this indifferent unhuman is immanently "within" the human as well. It is for this reason that the examples of black illumination in supernatural horror indelibly bear the mark of a generalized misanthropy, that moment when philosophy and horror negate themselves, and in the process become one and the same.

(4) - H.P. Lovecraft, "The Unnamable," in *The Dreams in the Witch-House and Other Stories*, ed. S.T. Joshi (Penguin, 2004), p. 89.

## THE HYPOTHESIS OF THE TWO ANTHROPOS BY EWEN CHARDRONNET

Let's start from the idea that the Flood can be seen as the founding myth of the Holocene. It is actually possible that the myths of the Flood could stem from the great melting that occurred at the end of the Pleistocene, tales born of a distant memory of the end of the last great glacial period (the Würm glaciation or Würmzeit) about 8000 years BC when the interglacial age of the Holocene began. We can also note that, if (the beginning and) the end of a glacial period is certainly a transition (from a glacial period to an interglacial period) defined by the albedo of the Earth – the amount of solar energy reflected by the Earth's surface, in relation to the total solar energy, parameter which results from the amount of the Earth's surface covered in ice – and that it is certainly a catastrophic phenomenon, lasting a relatively short time as recent models seems to suggest, the last glaciation could have been, during several centuries or even just a few decades, a period of diluvian downpours accompanied by gigantic floods in many regions of the world.

The myth of the Flood can thus be seen from three angles :

global warming and its catastrophic consequences; the extinction of species and the divine mission to save non-humans; the reduction of lifespans, immortality for a few chosen ones.

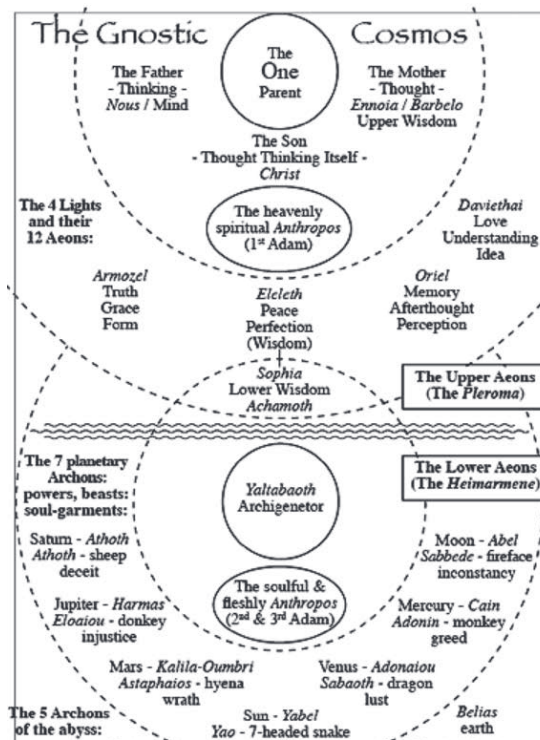
Concerning this last point, the Bible states that, before the Flood, the patriarchs lived for a thousand years. Noah was the last patriarch to live so long, after the Flood God reduced the lifespan of humans. But the Flood is not a Semitic myth, it is Sumerian. The myth of Noah (500 BC)

manding him to construct an ark in order to take with him specimens of all living beings. Having carried out the mission successfully, God rewards Atrahasis with the gift of immortality, but also makes sure that humans disturb his peace less by reducing their lifespan, introducing sickness, sterility and so on.

Contemporary transhumanism can thus be seen as a myth of victory over the Holocene by a "good Anthropocene", the return to the pre-Flood state of semi-gods, a victory that reclaims the long lifespan of the pre-Flood patriarchs, or, even better, the gift of immortality accorded to Atrahasis.

In the same way the catastrophism of the apostles of the "bad Anthropocene" can be seen as a quest for becoming perfect like Noah, saviour of the simple and pure non-human souls, as developed in the Sethian Gnostic myth – from Seth, third son of Adam, the only pure one after Cain's murder of Abel. Noah is a descendant of Seth (seed of Seth), in charge of the divine mission of saving the non-humans from the Flood caused by the Demiurge, son of the Aeon Sophia-Gaia and creator of matter, and getting rid of Cain's descendants, fruit of the sully of Enlil, the Demiurge (the head

by Adam, included in the Nag Hammadi Codex), seems to indicate the division of the Anthropos in two distinct and parallel incarnations, two creations, two streams of the physical expression of humanity, the mortal form and the immortal double.







Burroughs describes virus domination spreading through vibrating photos, flicker ghost, spliced recordings, engram tapes, juxtapositions, the other half, permutations, pattern pulsing, remote mineral silence, writing machines. The sequences of relations, established by the method of the four senses, convert the particular into the universal, daily life into human universal history. It is an algorithm, it is software performed over words that have since then been repeated over the centuries. Those words, the scriptures, transported a logic, a virus, as Burroughs named it, an infectious logic of ideology. They are streams of words that, for Burroughs, correspond to a form of alien invasion, or a "biological mutation". The nature of these alien invaders is polymorphous, sometimes "alien", sometimes undercover police agents, an "inflexible machine", a mixture of radioactive vapor bureau officers. (15)

Nagasaki - Injury Headquarters - Dual mammalian structure - Hiroshima People - Or some disgusting officers produced the rest of it. (Burroughs, W.S. (1964) Nova Express, p.37)

The idea I propose is that text can be used to interface landscape, placing text against landscape or over it, becoming a mold of the real, being itself an index, a system of coordinates that parallels the multidimensionality of each site. Text molds the "instantaneous multidimensional", redacting it into a mold of a face, the traces left in topographies, traces of history, and in the particular case of Antarctica, and many other remote inaccessible places, traces of empire.

I will take my work, *A common element* (2013) (15) as an example of such performative text and propose it as a mimetic interface to the instantaneously multitudinal in the Antarctic landscape. From time to time the murmur continued. The sound also took the form of a continuous screeching or

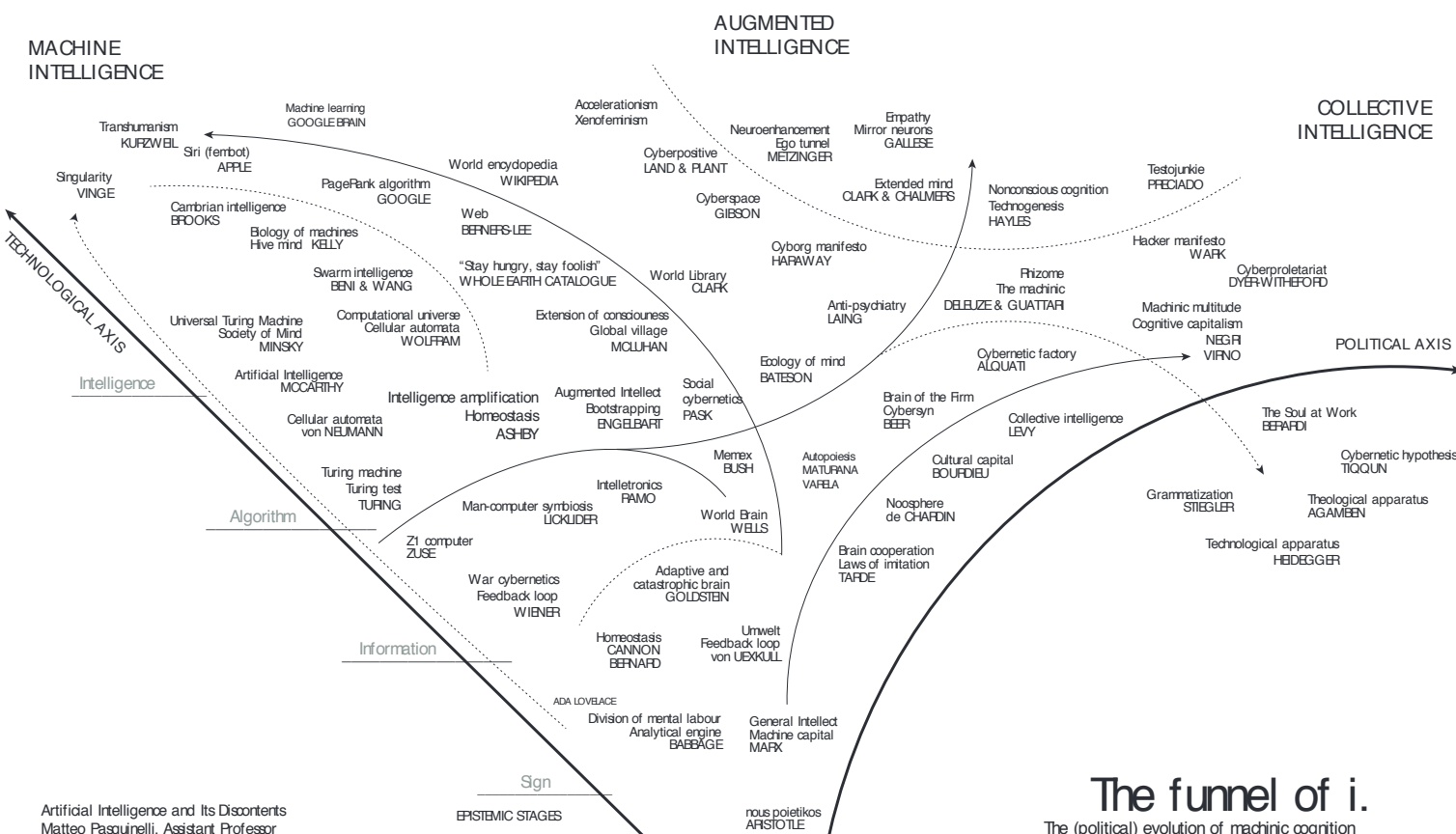
jingling comprised of many overlapping high-frequency whistles. The Very Low Frequency emissions involved in this universal interweaving. With the exception of sounds produced normally by natural noises, they are called Very Low Frequency emissions or VLF ionospheric noise. (...)

Nature and influence of VLF emissions using unusual society-community teams. The evidence is strong that *VLFenomenology* emissions in electro magnetic space are complex political geo messages remaining with no explanation. Various theories have brought up the presence of charged particles in the outer ionosphere.

Guided missiles, flee with amphibious submarines. North American Rockwell World War and the discovery of the magnetosphere was present during testing and in the way the sky lit up at night. (...) Report in itself : the Garrett Corporation has designed the motors - They bounce between the earth and the ionosphere and occasionally they take a ride in military planes; General electric has its own *think transcender* in order to reach the earth again in the opposite hemisphere. Hewlett-Packard company "radar control" Jet propulsion laboratory; Littletown Industries build arching over the equator, whistlers and globetrotting signals, signals of assault ships and orientation and fire control systems, from the initial explosion of a bolt of lightning they unfold, forming a alissando.

(...) Quasi-musical sounds with audible frequencies like a faint jumble to *World War, North American Rockwell* at 1500 cycles per second. It is the property of being directionally dependent or toisotropy of millions of U.S. dollars. It has been observed in the high performance *intercosmos satellites* called TEMP running guided missiles and advanced amphibious submarines.

- (1) - This text has been written as a snapshot of a larger essay. It is using concepts found in the books, *Naked Lunch* (1959), *The Ticket That Exploded* (1962), *Nova Express* (1964) and *The Third Mind* (1978) by William S. Burroughs.
- (2) - *The Third Mind* (1978) p.10-11 *The ticket that exploded* (1962) p.65
- (3) - op. cit. p.57
- (4) - *The Ticket That Exploded* (1962) p.58-59
- (5) - op.cit p.49
- (6) - Odier, Daniel. *The Job: Interviews with William S. Burroughs*. New York: Penguin, 1989. p.28
- (7) - Everything is done with tape recorders" *The Ticket That Exploded* (1962) p.166
- (8) - *The Ticket That Exploded* (1962) p.20
- (9) - As described in detail in *Nova Express* (1964) and *The Ticket That Exploded* (1962)
- (10) - Jameson, F (1981) "The Political Unconscious: Narrative as a Socially Symbolic Act. p.30
- (11) - Fredric Jameson, *The Political Unconscious* (1981),p.29
- (12) - Fredric Jameson, *The Political Unconscious* (1981),p.30
- (13) - A concept coined by the Pentagon (2000) and brought into academic discourse by Steve Goodman in *Sonic Warfare* (2010)
- (14) - "Junk yields a basic formula of evil virus: The algebra of need". *The Naked Lunch* (2004) p.4
- (15) - According to Burroughs the origin and history of this word virus was formulated by Steinplatz "the word was a virus of what he calls BIOLOGIC MUTATION effecting the biologic change in its host which was then genetically conveyed." *Electronic Revolution* (1970) p.6. A further argumentation should consider the relation with Valis (1981) from Philip K Dick. Alien agents in *Nova Express* (1964) p.33. An inflexible machine in *The Naked Lunch* (2004) p.112
- (16) - A common element (2014) is a radio work whose text has been executed through the application of Burroughs' writing techniques using as sources two articles by Douglas Kahn, *Earth Sound Earth Signal. Energies and Earth Magnitude in the Arts and The Military-Arts Nexus: Two cases in the United States, c. 1970.* and Helliwell text on *Whistlers and Related Ionospheric Phenomena*. <http://radio.museoreinasofia.es/alexandraperez>



# IS THERE ANY WORLD TO COME?

BY DÉBORAH DANOWSKI & EDUARDO VIVEIROS DE CASTRO **anthropologist**

The problem of the end of the world is always formulated as a separation or divergence, a divorce or orphaning resulting from the disappearance of one pole in the duality of world and inhabitant—the beings whose world it is. In our metaphysical tradition, this being tends to be the “human,” whether called *Homo sapiens* or *Dasein*. The disappearance may be due to either physical extinction or one pole’s absorption by the other, which leads to a change in the persisting one. We could schematically present this as an opposition between a “world without us,” that is, a world after the end of the human species, and an “us without world,” a humanity bereft of world or environment, a persistence of some form of humanity or subjectivity after the end of the world.

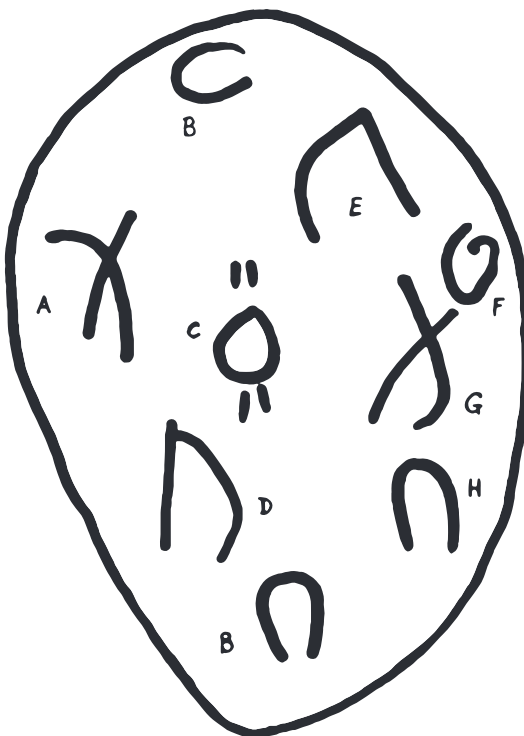
But to think the future disjunction of world and inhabitant inevitably evokes the origin of its present, precarious conjunction. The end of the world projects backward a beginning of the world; the future fate of humankind transports us to its emergence. The existence of a world before us, although regarded as a philosophical challenge by some (if Meillassoux’s subtle argument is to be believed (1), seems easy enough for the average person to imagine. The possibility of an us before the world, on the other hand, is less familiar to the West’s mythological repertoire.

Yet it is a hypothesis explored in several Amerindian cosmogonies. It finds itself conveniently summarized in the commentary that opens a myth of the Yawanawa, a people of Pano-speakers from the western Amazon: “The myth’s action takes place in a time in which ‘nothing yet was, but people already existed.’” (2) The variation of the Aikewara, a Tupian-speaking people who live at the other end of the Amazon, adds a curious exception: “When the sky was still very close to the Earth, there was nothing in the world except people—and tortoises!”

At first, then, everything was originally human, or rather, nothing was not human (except for tortoises, of course, according to the Aikewara). A considerable number of Amerindian myths—as well as some from other ethnographic regions—imagine the existence of a primordial humankind, whether fabricated by a demiurge or simply presupposed as the only substance or matter out of which the world could have come to be formed.

These are narratives about a time before the beginning of time, an era or eon that we could call “pre-cosmological.” (4) These primordial people were not fully human in the sense that we are, since, despite having the same mental faculties as us, they possessed great anatomic plasticity and a certain penchant for immoral conduct (incest, cannibalism). After a series of exploits, some groups of this primordial humankind progressively morphed—either spontaneously or due to the action of a demiurge—into the biological species, geographical features, meteorological phenomena, and celestial bodies that comprise the present cosmos. The part that did not change is the historical, or contemporary, humankind. (5)

One of the best illustrations of this general type of cosmology is described in great detail in the autobiography of Yanomami shaman and political



Dogon drawing (after Marcel Griaule & Ogotommeli, *Le renard pâle*, 1951).

Drawing of the Dogon system sketched on the sand by Ogotommeli with:

- (A) Dogon,
- (B) Dogon (with two positions)
- (C) Dogon
- (D) Dogon,
- (E) Dogon,
- (F) Dogon,
- (G) Dogon,
- (H) Dogon.

as the primal substance out of which many if not all of the categories of beings and things in the universe arose, the Campa of today being the descendants of those ancestral Campa who escaped being transformed. (7)

We could also mention the cosmogony of the Luiseño from California, evoked in *The Jealous Potter* by Claude Lévi-Strauss, in which the cultural hero Wyiot differentiates the originary human community into the various species of currently existing beings. (8) The theme is also found in some non-Amerindian cultures: for example, the Kaluli from Papua New Guinea recount that “at that [pre-cosmological] time, according to the prevailing story, there were no trees or animals or streams or sago or food. The Earth was covered entirely by people.” (9) A man of authority (a big man) then decided to transform the different groups of people into different species and other natural phenomena: “those who were left aside became the ancestors of human beings.”

We can see how, in Amerindian thought (and some others), humankind or personhood is both the seed and the primordial ground, or background, of the world. (10) *Homo sapiens* is not the character who comes to crown the Great Chain of Being by adding a new ontological layer (spiritual or “cognitive,” in modern parlance) on top of a previously existing organic layer that would, in turn, have emerged out of a substrate of “dead” matter. In the West’s mythophilosophical tradition, we tend to conceive animality and nature in general as referring essentially to the past. Animals are living arche-fossils, not only because beasts roamed the Earth long before we did (and because these archaic beasts were like magnified versions of present animals), but because the human species has its origin in species that are closer to pure animality the more we recede in time. (11)

By virtue of a felicitous innovation—bipedalism, neoteny, cooperation—the Great Watchmaker, whether blindly or omnisciently, conferred upon us a capacity that made us into more-than-organic beings (in the sense of Alfred Kroeber’s “superorganic”), endowed with that spiritual supplement that is “proper to man”: the species’ precious *private prop-*

erty to our own. The world as we know it, or rather the world as the indigenous knew it, is the present world that exists (or existed) in the interval between the time of origins and the end of times—the intercalary time that we could call the “ethnographic present” or the present of *ethnos*, as opposed to the “historical present” of the nation-state. Our present world that exists is conceived in some Amerindian cosmologies as the epoch that began when pre-cosmological beings suspended their ceaseless becoming-other (erratic metamorphoses, anatomic plasticity, “unorganized” corporeality) in favor of greater ontological univocality. (12)

Putting an end to the “time of transformations”—a common expression among Amazonian cultures—those unstable anthropomorphs who lived at the origins took on the forms and bodily dispositions of those animals, plants, rivers, and mountains that they would eventually come to be. This was, in fact, already prefigured in the names they bore in the absolute past; thus, for example, the Peccary Yanomami—the tribe of originary people who had the name “Peccary” [*queixada*—became the term “peccary,” that is, the wild pigs that we hunt and eat today (*Yanomani* means “people” in their language). The whole world (though again, perhaps not the tortoise or some other oddity) is virtually included in this originary proto-humankind; the pre-cosmological situation might thus be indifferently described as a still worldless humankind or as a world in human form, an anthropomorphic multiverse that gives way to a world conceived as the result of the (never quite finished) stabilization of the infinite potential for transformation contained in humankind as universal substance, or rather universal “actance,” both originary and persistent. (13) We thus see a multiple inversion of the cannibalistic or zombie-apocalypse scenarios that figure in Cormac McCarthy’s *The Road* and similar narratives: in indigenous mythology, human food consists of humans who morphed into animals and plants; humankind is the active principle at the origin of the proliferation of living forms in a rich, plural world. But the indigenous scheme is also an inversion of the Garden of Eden myth: in the Amerindian case, humans are the first to come, and the rest



multiplicity whose morphological externalization—that is, speciation—is precisely what provided the cosmogonic narrative. It is Nature that is *born* out of or separates itself from Culture, not the other way round, as in our anthropology and philosophy.

We can therefore see that the subsumption of the world by humankind in Amerindian cosmologies travels in the opposite direction to that of the myth of technological Singularity. It refers to the past, not the future; its emphasis is on the stabilization of the transformations that came to differentiate animals from those humans who continued to be so, and not the acceleration of the transformation of the animals we were into the machines we will be.

Indigenous praxis emphasizes the regulated production of transformations capable of reproducing the ethnographic present (life-cycle rituals, the metaphysical management of death, shamanism as cosmic diplomacy), thus thwarting the regressive proliferation of chaotic transformations. Control is necessary because the world's transformative potential, as attested to by the omnipresent traces of a universal anthropomorphic intentionality and its actions, manifests a residual magnetism that is at once *dangerous* and *necessary*. *Danger* lies in the fact that former humans retain a human virtuality underneath their present animal, vegetal, astral appearance, in a similar (but symmetrically opposed) way to how we often fantasize about being wild animals deep down under our civilized guise.

Nonhumans' archaic humanoid latency—humanity as the animal unconscious, we could say—constantly threatens to break through the openings and tears in the fabric of the everyday world (dreams, illnesses, hunting incidents), violently reabsorbing humans back into the pre-cosmological substrate where all differences continue to chaotically communicate with each other. (14) In turn, the *necessity* of this residual magnetism lies in the fact that the actualization of the ethnographic present presupposes a recapitulation or counter-effectuation of the pre-cosmological state, because that is the reservoir of all difference, all dynamism, and therefore all possibility of sense. The anthropomorphic multiverse, in its originary virtuality, is thus both conjured and kept at bay by an animalization of the human—the theriomorphic mask of the spirit-dancer, the becoming-beast of the warrior—which is reciprocally a mythical humanization of the animal. (15) It is from this double movement that *ethnos* ceaselessly emerges. The ethnographic present is in no way an immobile "time"; slow societies know infinite speeds, extrahistorical accelerations—in short, *becomings*—that make the indigenous concept of *buen vivir* ("good life") something metaphysically closer to extreme sports than to a relaxed retirement in the countryside.

What we could call the natural world, or "world" for short, is for Amazonian peoples a multiplicity of intricately connected multiplicities. Animal species and other species are conceived as so many kinds of people or peoples, that is, as *political entities*. It is not "the jaguar" that is human; it is individual jaguars that take on a subjective dimension (more or less pertinent according to the practical context of interaction) when they are perceived as having a society behind them, a collective political alterity. (16) To be sure, we too—by which we mean we Westerners, a concept that includes, through mere convention, Brazilians of European descent—think, or would like to think that we think, that it is only possible to be human in society, that man is a political animal. But Amerindians think that there are many more societies (and therefore also humans) between heaven and Earth than have been dreamt by our philosophy and anthropology.

What we call the environment is for them a society of societies, an international arena, a *cosmopoliteia*. There is, therefore, no absolute difference in status between society and environment, as if the first were the subject and the second the object. Every object is always another subject, and is always more than one. The platitude that every novice left-wing militant learns—that everything is political—acquires in the Amerindian case a radical concreteness (for the indeterminacy of this "everything," see our famous tortoises!) that not even the most enthusiastic activist in the streets of Copenhagen, Rio, or Madrid might be ready to acknowledge.

Translated by Rodrigo Nunes

This is an excerpt of Déborah Danowski and Eduardo Viveiros de Castro's *Há mundo por vir? Ensaio sobre os medos e os fins* (Cultura e Barbárie, 2014; English translation forthcoming, Polity Press, 2016).



- (1) See Quentin Meillassoux, *Après la finitude. Essai sur la nécessité de la contingence* (Paris: Seuil, 2006)
- (2) Miguel Carid, *Yawanawa: da Guerra à Festa*, MA dissertation, PPGAS / UFSC (1999), 166, quoted in Oscar Calavia, "El Rastro de los Pecaríes. Variaciones Míticas, Variaciones Cosmológicas e Identidades Étnicas en la Etnología Pano," *Journal de la Société des Americanistes* 87: 161–76.
- (3) Orlando Calheiros, *Aikewara: Esboços de uma Sociocosmologia Tupi-Guarani*, PhD Thesis, PPGAS / Museu Nacional do Rio de Janeiro (2014), 41.
- (4) Eduardo Viveiros de Castro, "The crystal forest: notes on the ontology of Amazonian spirits," *Inner Asia* 9 (2) (2007): 153–72.
- (5) With some improvement in the moral field, literal cannibalism, for instance, becomes objectively unnecessary, since,

with the advent of the cosmological era, animals and plants adequate for human nourishment appear.

(6) See Davi Kopenawa and Bruce Albert, *La Chute du Ciel: Paroles d'un Chaman Yanomami* (Paris: Plon, 2010); Bruce Albert, *Temps du Sang, Temps des Cendres: Représentation de la Maladie, Système Rituel et Espace Politique chez les Yanomami du Sud-Est (Amazonie Brésilienne)*, PhD thesis (1985), Université de Paris X (Nanterre).

(7) Gerald Weiss, "Campa Cosmology," *Ethnology* 9 (2) (1972): 169–70. "Many, if not all categories"—compare this to the Aikewara exception concerning tortoises in the characterization of the pan-human state of pre-cosmological reality. These provisions are important because they highlight an essential dimension of Amerindian mythocosmologies: such expressions as "nothing," "everything," or "all" function as qualifiers (not to say "quasifiers") more than as quantifiers. We cannot delve deeper into this discussion here, but it carries obvious implications as to the adequate comprehension of the indigenous concepts of cosmos and reality. Everything, including "the Everything," is only imperfectly totalizable: the exception, the remainder, and the lacuna are (almost always) the rule.

(8) Claude Lévi-Strauss, *La Potière Jalouse* (Paris: Plon, 1985), 190–92.

(9) Edward Schieffelin, *The Sorrow of the Lonely and the Burning of the Dancers* (New York: St. Martin's Press, 1976), 94.

(10) That statement requires nuancing and differentiating in regard to several Amerindian cosmologies, not to mention the occasional exception to it. There is an ongoing debate on the extension and comprehension of this mythophilosopheme regarding a primordial or infrastructural humankind in indigenous America, a debate that is tied with another one around the concepts of "animism" and "perspectivism," which we will not explore here.

(11) See Günther Anders, *Le Temps de la Fin* (Paris: L'Herne, 2007), 75: "the pre-human region whence we came is that of total animality."

(12) "Ethnographic present" is what anthropologists call, nowadays almost always with a critical intention (although Hastrup has raised an important objection to that), the discipline's classic narrative style, which situates monographic descriptions in a timeless present more or less coetaneous with the observer's fieldwork. This style pretends to ignore the historical changes (colonialism, etc.) that allowed precisely for ethnographic observation. We shall use the expression, however, in a sense doubly opposed to that, so as to designate the attitude of "societies against the state" in regard to historicity. The ethnographic present is therefore the time of Lévi-Strauss's "cold societies," societies against accelerationism, or slow societies (as one speaks of slow food or slow science—see Isabelle Stengers), for whom all cosmopolitical changes necessary for human existence have already taken place, and the task of *ethnos* is to secure and reproduce this "always already." See Kirsten Hastrup, "The Ethnographic Present: A Reinvention," *Cultural Anthropology* 5/1: 45–61; Isabelle Stengers, *Une Autre Science Est Possible! Manifeste pour un Ralentissement des Sciences* (Paris: La Découverte, 2013).

(13) An Amazonian metaphysician could call this the argument of "human ancestrality" or "the evidence of the anthropofossil." (14) Those beings in indigenous cosmologies that we classify under the heteroclitic category of "spirits" generally tend to be entities that have preserved the ontological lability of the originary people, and which, for that reason, characteristically oscillate between human, animal, vegetable, etc.

(15) Viveiros de Castro, 1996.

(16) The difference between animism and totemism is, in this regard, pace Philippe Descola and with Marshall Sahlins, not very clear and possibly not very meaningful. See Descola, *Par-delà Nature et Culture* (Paris: Gallimard, 2005); Sahlins, "On the Ontological Scheme of Beyond Nature and Culture," *HAU: Journal of Ethnographic Theory*, 4/1 (2014): 281–90



**A first hypothesis** speculates about a capitalism whose Earth devastation with a view to its future desertion would be the «alien» symptom.

The alien here, would be the one that would come out of his terrestrial origin to become something else, to give himself other bodies, other becomings, possibly getting back this way, other origins that these his cradle pregnancy would have detracted from him. He would come from a power effect who in the name of humanity in progress cosmic destiny, would strive to redefine or even free itself from humans and non humans terrestrial co-evolution to leave Planet earth and go into outer space.

Russian cosmism imagined this departure as a logical extension of humankind evolution, but the atom bomb deserved the right to remind us only chosen ones could reach it, leaving the post-atomic bioproletariat locked in a devastated planet.

This scenario opposing average earthlings versus cosmic elite could yet be reversed: isn't disalienated working class utopian horizon to become non terrestrial, to become an Other? Isn't it from now on deported into space, away from a murdered planet controlled by capitalism chthonian forces? Isn't there an ultimate way for men and women to renew with their stellar origins? The alien qualifying term depends here on the chosen centremment point: Capitalism is alien by disowning its terrestrial filiation which it uses as a simple medium serving its cosmic aims. Human is alien whereas breaking away from a devastated planet to keep utopian views. And non-alien would be these undertaking a tragical re-rooting, a return to Earth, riding themselves of the alien saga.

**A second hypothesis** refers to Planet earth own alien roots. Earth would be far to self belong and would itself be part of cosmic economics, which loaded the planet with gold, water, precious metals, viruses, actors of its evolution and transformation via asteroids bombing... to fertilize it, so organic resources could come to its surface. Earth would then be a place of socialisation and acclimatisation, a becoming-earthling of alien entities and

components. In this way, Earth could appear as a pirate place gathering treasures by accidents accumulation, and giving terrestrial society as a shipwrecked sailors society, building the becoming of their island either voluntary or involuntary.

The potential design of such a complex and multi agents process could also invite to consider, as a last resort, extraterrestrial management monitoring the planet and its inhabitants future. The destiny of growing beings on Earth shall then tightly depend on a large cosmic economy, on an alien managers class. The alien here, is the Capitalism effective power on Earth, the new control class fantasy face. It is not humankind counterfeits, its bad anthropomorphic copy, nor a simple regulator but a control system, an imperceptible control class not acting under cover but in a way that is simply not intelligible yet.

Behind anthropomorphic mask, of whom is alien the name of? This investigation could lead listing an entities taxonomy (technological entities, algorithms. Entities coming out of the future or the past, non terrestrial, immaterial beings, unconscious forces, non humans, etc...) operating on Earth and through out it, feeding on it under purposes which have yet to be clarified...

**A third hypothesis** questions a triple privilege: privilege of humans on other species, terrestrial or not (speciesism), privilege of Earth on other cosmic environments (earth-centrism), privilege of living organisms on other carbon-free organisms (biocentrism). A post-humanism, a becoming alien of the human based on an intelligent agents plurality, relying on moral criteria freed from the humanistic canon or even from the terrestrial and biocentric canons, arises from these questions. This post-humanism would arouse the building of new ethical community forms, new functional assemblies, and the experimentation of new being processes, as non humans, could be defined as alien.

Alien capitalism represents here the discentrement and deterritorialisation power, setting off a categories radical crisis. The lack of consistent capi-

talism ontology results in engineering and global agents mix up (bodies, souls, matter,...), the acceptance of a xeno status of the being, which out of a proper frame and moral values, can be built, rebuilt, transformed or reassembled. The non-alien post human questioning this capitalist chaotisation while breaking out humanistic canon, comes to redefine a terrestrial being based on terrestrial agents assumed intersubjectivity, expanded to their cosmic environment.

**A forth hypothesis** turns alien capitalism into a meta-discourse, an abstraction field looming over what is real, producing a strong effect of authority. It indexes resources from the labs abstracts sites (the Market itself being sort of a lab), enunciates their respective roles in a same large system. This meta-discourse relates the planet turned into Capital, set to work, namely driven a stranger to itself, managed as an innovating company. This discursive machine - substantiated by simulations, technocratic narratives, convincing constructions of facts - produces capture devices and projective spaces orienting our actions, canalizing our desires, controlling bodies, legitimizing regulations, driving industrial mutations, scientifically governing or subverting mass cognition. Alien capitalism is used here as a calibration procedure of the real, as a strategic tool establishing things properties.

What are these alien capitalism investigations aiming to? It first means to open the Great transformation imaginary space. From the factory planet and its share of destructions and ecological disorders, to the laboratory planet meaning to substitute to it an engineered rational and organised resources management, which are the decentrement procedures able to free us of world frames that aren't even reassuring us any more?

Alien capitalism is a trauma input figured as a strangeness. World is unknown again, possibly terrifying. Many entities than abstract humanism had managed to keep out of its field of view, are emerging and operating. Coordinate systems are appearing too. Sky also finally widely opened up, black endlessness ocean endlessly filled up with worlds.

## ALIENS IN GREEN

An investigation laboratory operating in the laboratory

Aliens in Green mobile investigation laboratory is seeking collaborators to help to develop inquiries into alien agents of anthropocene' biopower. The lab implements communication and media processes, reaching out and opening a critical public space. It aims to activate problematisation and analysis tools, attend recognition events and intervene in public space, relying as much on popular sciences archetypes, mass culture and science-fiction, as on analysis of current technological mutations. Aliens in Green connects open-science philosophy to practices.

One may understand the Aliens in Green tactical theatre lab as a symmetrical and antagonist entity to one in which they act as discursive agents dealing with human relations with life forms of a third type. But unlike one in which who operate secretly, Aliens in Green operations are open in order to allow earthlings to identify the numerous collusions between capitalist and biopolitical interests.

Phytoteratology monsters in becoming.

